

MANUAL OF DRILL AND CAMPING,

FOR

The St. John Ambulance Brigade.

ADAPTED FROM THE MANUALS OF
INFANTRY DRILL AND R.A.M.C. TRAINING,
1911.

BY PERMITS OF THE CONTROLLER OF
H.M. STATIONERY OFFICE.

Price 5d. net, post free.

LONDON:

ST. JOHN AMBULANCE ASSOCIATION,
St. John's Gate, Clerkenwell, E.C.



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CONTENTS.

	PAGE.
Definitions	IX.
Key to Plates	XI.

PART I.

DRILLS AND EXERCISES.

Chapter I. The Training of Recruits.

SECTION.	PAGE.
1. General instructions	1
2. Method of instructing recruits	1
3. Words of command	2

SQUAD DRILL WITH INTERVALS.

4. Formation of squads with intervals	3
5. Attention	4
6. Standing at ease	5
7. Standing easy	6
8. Dressing a squad with intervals	6
9. Turning by numbers	7
10. Saluting	8
11. Length of pace, and time in marching	10
12. The drum and pace stick	11
13. Position in marching	12
14. Marching in quick time	13
15. Changing step	14
16. Marching in double time	14
17. The side step	15
18. Turning when on the march	16

SQUAD DRILL IN SINGLE RANK.

SECTION.	PAGE.
19. Formation of squads in single rank ...	17
20. Dressing in single rank... ..	17
21. Numbering a squad	17
22. Opening and closing a squad	18
23. Marching in single rank	18
24. Changing the pace from quick to double time, and <i>vice versa</i>	18
25. The diagonal march	19
26. Changing direction	19
27. Marching as in file	21

SQUAD DRILL IN TWO RANKS.

28. Formation of squads in two ranks	22
29. Dressing	23
30. Numbering a squad	23
31. Opening and closing a squad	23
32. Marching in line	24
33. Marching in file	26
34. The formation of fours and elementary training in march discipline	28
35. Forming fours	29
36. The passage of obstacles	32
37. Movements in fours	32
38. Dismissing	33

Chapter II. Section Drill.

39. Organization of the section	34
40. Object of section drill	34
41. General rules	35

CONTENTS.

V.

SECTION.	PAGE.
42. Inspection and telling off	35
43. Extending from the halt	37
44. Extending on the move	37
45. A section marching in fours extending to a flank	37
46. Movements in line in extended order ...	38

Chapter III. Company Drill.

47. Preliminary remarks	40
48. General rules	41
49. Inspection and telling off	44
50. Formations from company column	45
51. Formations in or from line	47
52. Formations when moving in fours	50
53. Dismissing	51
54. Route marching	51

Chapter IV. Stretcher Exercises.

55-57. General Remarks	52
58. Sizing the bearers	53
59. Forming the squads	54
60. Supplying stretchers	55
61. Lifting and lowering stretchers	57
62. Storing or piling stretchers	57

EXERCISES WITH CLOSED STRETCHERS.

63. Advancing and retiring	58
64. Moving to a flank	59
65. Changing direction	59
66. Extending	60

SECTION.	PAGE
67. Closing	60
68. Preparing stretchers	63
69. Closing stretchers	63
70. Lifting and lowering stretchers	64
71. Changing numbers	66
72. Advancing and retiring	66
73. Halting	67
74. Inclining	69
75. Forming into line	69
76. Unloading and loading stretchers	69
LOADING AND UNLOADING STRETCHERS WITH REDUCED NUMBERS	
77. With three bearers	76
78. With two bearers	76
EXERCISES FOR STRETCHER, MARK I, SPECIAL.	
79. With six bearers	77
Chapter V. Ambulance Wagon Exercises.	
80. General Remarks	79
81. Loading wagons	79
82. Unloading wagons	84
HAND-SEAT EXERCISES.	
83. The hook-grip seat	88
EXERCISES WITH RAILWAY WAGONS.	
84. General Remarks	88
85-86. Loading	89
87. Unloading	91
Chapter VI. Litters.	
88. Instructions for using	92

PART II. CAMPING.

Chapter VII. Tent Pitching Exercises.

BELL TENT.

SECTION.	PAGE
89. Description	98
90. Pitching a bell tent by two men	98
91. Trenching a bell tent	100
92. Precautions in wet weather	100
93. Striking a bell tent	101

HOSPITAL MARQUEE.

94. Description... ..	103
95. Pitching a marquee	103
96. Trenching a marquee	107
97. Striking a marquee	107

OPERATING TENTS.

98. Description... ..	108
99. Pitching an operating tent	109
100. Striking an operating tent	111

CAMPS.

101-102. Camps... ..	113
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Chapter VIII. Water Supplies.

103. Amount of water required	114
104. Impurities in water	114
105-106. Clarification	115
107. Filtration	118

Chapter IX. Field Cooking.

SECTION.	PAGE
108 General Remarks	119
109. Camp kettles	119
110. Field kitchens	121
111. Improvised field oven	123

Chapter X. Sanitation of Camps.

112-114. Camp sites	125
115-118. Kitchen and ablution places	127
119. Drying of clothes	131
120-121. Disposal of refuse	132
122-130. Disposal of excreta	134

Appendix.

SYLLABUS OF TRAINING IN CAMP	143
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Definitions.

Column.—Bodies of troops on parallel and successive alignments, at a distance from one another equal to their own frontage.

Company Column.—A company in column of sections.

Quarter Column.—Companies on parallel and successive alignments, at a distance from one another of six paces.

Company.—The tactical unit.

Covering.—The act of one or more men placing themselves correctly in rear of one another.

To Deploy.—To change formation from column or quarter column into line on the same alignment.

Depth.—The space occupied by a body of troops from front to rear.

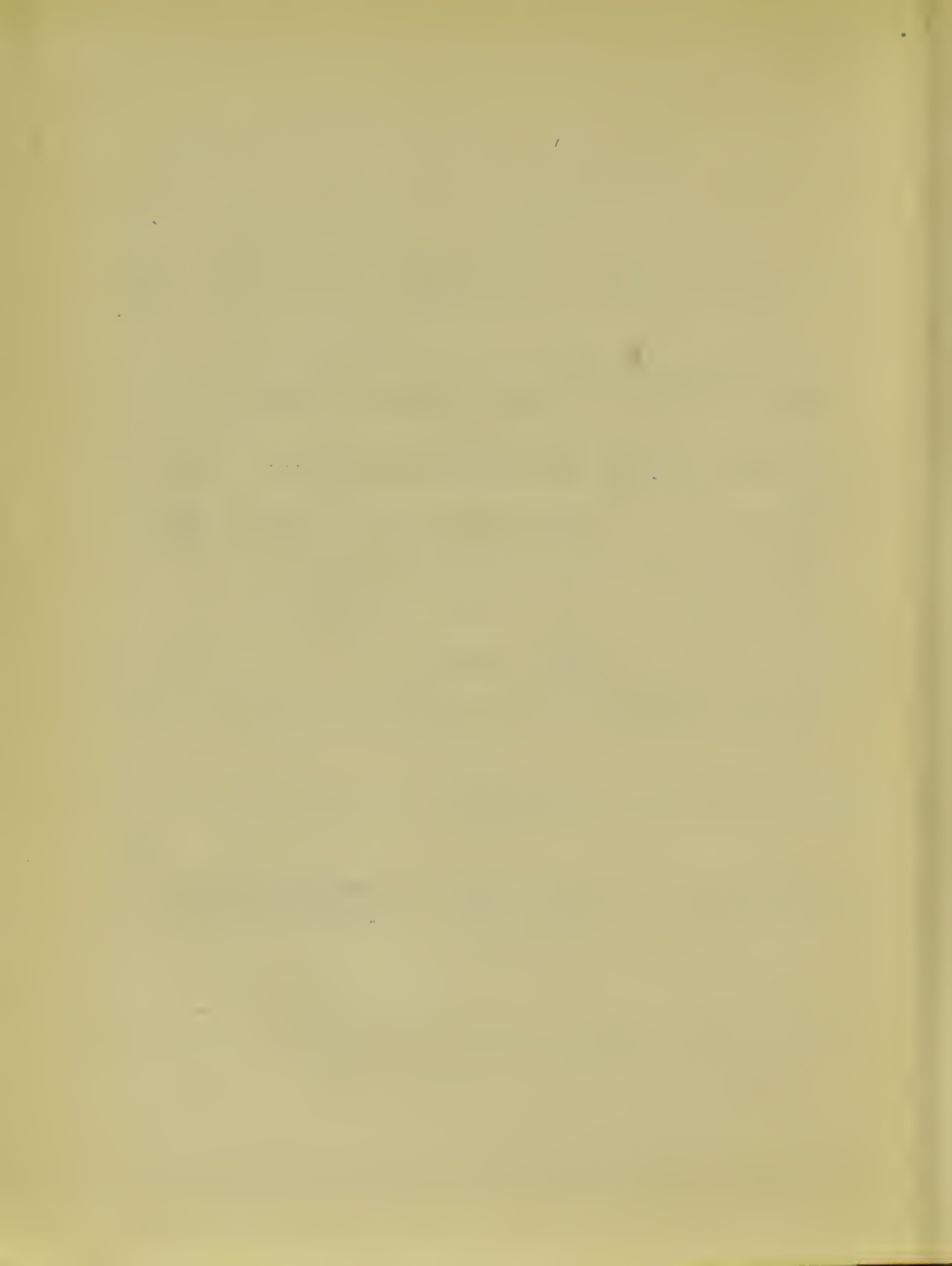
Distance.—The space between men or bodies of troops, from front to rear.

Direction (battalion, company, section or file of).—The battalion, company, section, or file, responsible for keeping the direction of the line of march.

To Dress.—To take up the alignment correctly.

Drill.—The execution of movements in unison.

Echelon.—A formation of successive and parallel units facing in the same direction ; each on a flank and to the rear of the unit in front of it.



PART I.
DRILLS AND EXERCISES.

CHAPTER I.

THE TRAINING OF RECRUITS.

1. *General instructions.*

1. Recruits will be formed for instructional purposes into squads; the maximum number of men in each squad should not exceed ten, but this number may be exceeded if necessary owing to lack of instructors.

2. The squad instructors will be most carefully selected. They must be intelligent, energetic and thoroughly well trained in the art of instruction. It will usually be found advantageous for the instructor to remain with the same squad throughout the period of training, and carry out the whole of the instruction.

2. *Method of instructing recruits.*

1. The instructor will be clear, firm, concise and patient; he must make allowances for the different capacities of the men, and avoid discouraging nervous recruits; he must remember that careful individual instruction is the best means of developing the intelligence.

2. The instructor will teach as much as possible by illustration, performing the movements himself or making a smart recruit perform them. The detail for each movement given in this manual is for the

information of instructors, who must avoid repeating this detail word for word, because such a method is wearisome and monotonous, and would not be understood by some recruits.

The instructor will explain the reason for every movement and formation.

3. Drills will be short and frequent to avoid the exhaustion of the instructor and recruits.

4. Recruits will be advanced progressively from one exercise to another, men of inferior capacity being put back to a less advanced squad.

5. At first the recruit will be placed in a position by the instructor, afterwards he should not be touched, but made to correct himself when faults are pointed out.

6. When the various motions have been learnt, instructions "by numbers" will cease.

3. *Words of command.*

1. Commands will be pronounced distinctly, and sufficiently loud to be heard by all concerned.

2. Commands which consist of one word will be preceded by a caution. The caution, or cautionary part of a command, will be given deliberately and distinctly; the last or executive part, which, as a rule, should consist of only one *word or syllable*, will

be given sharply : as COMPANY—HALT ; RIGHT—FORM ;

RIGHT HAND—SALUTE. A pause will be made between the caution and the executive word. Men will be taught to act upon the last sound of the executive word of command.

3. When the formation is moving, executive words will be completed as the men begin the pace which will bring them to the spot on which the command is to be executed. The caution must be commenced accordingly (*see also* Sec. 18, 1, note).

4. Young officers and non-commissioned officers will be frequently practised in giving words of command.

5. Indistinct and slovenly words of command beget slovenly movements and must always be avoided.

6. The cautions and commands in this manual are, as a rule, given with regard to one flank only, but the same principle applies equally to movements to the other flank, which will also be practised.

SQUAD DRILL WITH INTERVALS.

4. *Formation of squads with intervals.*

1. A few men will be placed in single rank at arm's length apart ; while so formed, they will be termed a *squad with intervals*.

2. Instruction can best be imparted to a squad in single rank, but, if want of space makes it necessary, the squad may consist of two ranks, in which case the men of the rear rank will cover the intervals between the men in the front rank, so that in marching they may take their own points, as directed in Sec. 13.

3. Recruits will, in the first instance, be placed in position by the instructor ; when they have learned to dress as described in Sec. 8, they will be taught to fall in as above described, and then to dress and correct their intervals. After they have been instructed as far as Sec. 18, they may fall in as directed in Sec. 19.

4. Recruits formed into a squad will be directed to observe the relative places they hold with each other; while resting between the exercises they will be permitted to fall out and move about; they will be instructed on the command *Fall in*, to fall in as they stood at first.

* In this and the following sections the title of the section or the name of the movement is shown in *italics* in the left-hand column, and is followed by the caution or executive word of command in SMALL CAPITALS. The right hand column contains the detail. Cautions or words of command referred to in the details are in *italics*.

5. *Attention.**

Spring up to the following position :—

Heels together and inline. Feet turned out at an angle of about 45 degrees. Knees straight. Body erect, and carried evenly over the thighs, with the shoulders (which should be level and square to the front) down and moderately back, —this should bring the chest into its natural forward position, without any straining or stiffening. Arms hanging easily from the shoulders as straight as the natural bend of the arm, when the muscles are relaxed, will allow, but with the hands level with the centre of the thighs. Wrists straight. Palms of the hands turned towards the thighs, and the inside of the finger tips lightly touching them, fingers hanging natur-

ATTEN—TION.

ally together and slightly bent. Neck erect. Head balanced evenly on the neck, and not poked forward, eyes looking their own height and straight to the front.

The weight of the body should be balanced on both feet, and evenly distributed between the fore part of the feet and the heels.

The breathing must not in any way be restricted, and no part of the body should be either drawn in or pushed out.

The position is one of readiness, but there should be no stiffness or unnatural straining to maintain it.

6. *Standing at ease.*

STAND AT—EASE

Keeping the legs straight, carry the left foot about one-foot length to the left so that the weight of the body rests equally on both feet, at the same time carry the hands behind the back and place the back of one hand in the palm of the other, grasping it lightly with the fingers and thumb, and allowing the arms to hang easily at their full extent. (It is immaterial which hand grasps the other).

Note.—When a recruit falls in for instruction he will *stand at ease* after he has got his dressing.

7. *Standing easy*
STAND—EASY.

The limbs, head and body may be moved, but the man will not move from the ground on which he is standing, so that on coming to *attention* there will be no loss of dressing. Slouching attitudes are not permitted.

Note.—If the command *stand easy* is given to men at *attention*, they will *stand at ease* and, after a pause, *stand easy*. Men *standing easy* who receive a caution, such as *squad*, *company*, etc., will assume the position of *stand at ease*. If the caution is followed by an executive word of command, e.g., *quick—march*, the men will first come to *attention* and then carry out the order received.

8. *Dressing a
squad with
intervals.*
RIGHT—DRESS.

Each recruit, except the right-hand man, will turn his head and eyes to the right and will then extend his right arm, back of the hand upwards, finger tips touching the shoulder of the man on his right. At the same time he will take up his dressing in line by moving, with short, quick steps, till he is just able to distinguish the lower part of the face of the second man beyond him. Care must be taken that he carries his body backward or forward with the feet, keeping his shoulders perfectly square in their original position.

EYES—FRONT.

The head and eyes will be turned smartly to the front, the arm dropped, and the position of *attention* resumed.

9. *Turning by numbers.*

1. TURNING TO THE RIGHT—ONE.

Keeping both knees straight and the body erect, turn to the right on the right heel and left toe, raising the left heel and right toe in doing so.

On the completion of this preliminary movement, the right foot must be flat on the ground and the left heel raised, both knees straight and the weight of the body, which must be erect, on the right foot.

TWO.

Bring the left heel smartly up to the right without stamping the foot on the ground.

2. TURNING TO THE LEFT—ONE.

Turn to the left, as described above, on the left heel and right toe, the weight of the body being on the left foot on the completion of the movement.

TWO.

Bring the right heel smartly up to the left without stamping the foot on the ground.

3. TURNING ABOUT—ONE.

Keeping both knees straight and the body erect, turn to the right about on the right heel and left toe, raising the left heel and right toe in doing so.

3 On the completion of this preliminary movement, the right foot must be flat on the ground and the left heel raised, both knees straight and the weight of the body, which must be erect, on the right foot.

Two.

Bring the left heel smartly up to the right without stamping the foot on the ground.

4. INCLINING TO
THE RIGHT—
ONE.

As described for turning to the right, but turning only half right.

Two.

As described for turning to the right.

5. INCLINING TO
THE LEFT—
ONE.

As described for turning to the left, but turning only half left.

Two.

As described for turning to the left.

Note.— In turning “judging the time” commands are RIGHT (or LEFT) TURN, RIGHT (or LEFT) INCLINE; the movements described above will be carried out on the word TURN or INCLINE observing the two distinct motions.

10. *Saluting to
the front*

1. *By numbers.*

Bring the right hand smartly, with a circular motion, to the head, palm to the front, fingers extended and close

SALUTE BY
NUMBERS—
ONE.

together, point of the forefinger one inch above the right eye, thumb close to the forefinger ; elbow in line, and nearly square, with the shoulder.

TWO.

Cut away the arm smartly to the side.

2. *Judging the time.*

SALUTE JUDGING
THE TIME—
SALUTE.

Go through the motions as in para. 1, and after a pause equal to two paces in quick time, cut away the arm.

Notes.—1. Saluting to the side is carried out as in Sec. 10, on the command RIGHT (or LEFT) HAND SALUTE, except that as the hand is brought to the salute, the head will be turned towards the person saluted. The salute will be made with the hand further from the person saluted.

2. Recruits will be practised in marching two or three together, saluting points being placed on either side. When several men are together, the man nearest to the point will give the time.

3. When a man passes an officer he will salute on the third pace before reaching him, and lower the hand on the third pace after passing him ; if carrying a cane he will place it smartly under the disengaged arm, cutting away the hand before saluting.

4. A man, if sitting when an officer approaches, will stand at attention, facing the officer, and salute with the right hand ; if two or more men are sitting or standing about, the senior non-commissioned officer or oldest soldier will face the officer, call the whole to ATTENTION, and alone will salute (as above).

5. When a man addresses an officer he will halt two paces from him, and salute with the right hand. He will also salute before withdrawing.

6. When appearing before an officer in a room, he will salute without removing his cap.

7. A man, without his cap, or when carrying anything will, if standing still, come to attention as an officer passes; if walking, he will turn his head smartly towards the officer in passing him.

8. A man, when riding a bicycle, will turn his head smartly towards an officer in passing him, and will not move his hands from the handle bar.

9. A man driving a vehicle will bring his whip to a perpendicular position, with the right hand resting on the thigh, and turn his head smartly towards an officer when passing him.

10. A man riding on a vehicle will turn his head smartly towards an officer when passing him.

11. Ambulance and non-commissioned officers will salute with the right hand.

12. Officers or men passing troops with uncased colours will salute the colours and the C.O. (if senior).

13. Officers and men, passing a military funeral, will salute the body.

14. Officers and men in command of parties, when paying or returning a compliment, will give the command "Eyes right (or left)" and at the same time salute with the right hand.

11. *Length of pace, and time in marching.*

1. *Length of pace.*—In *slow and quick time* the length of a pace is 30 inches. In *stepping out*, it is 33 inches, in *double time*, 40, in *stepping short*, 21, and in the *side pace*, 15 inches.

When a man takes a side pace to clear or cover another, as in forming fours, Sec. 46, the pace will be 30 inches.

2. *Time* — *In slow time*, 75 paces are taken in a minute. *In quick time*, 120 paces, equal to 100 yards in a minute, or 3 miles 720 yards in an hour, are taken. Recruits, when not in marching order, may be ordered to increase the cadence to 140 paces per minute for short periods. *In double time*, 180 paces, equal to 200 yards a minute, are taken. The time of the *side pace* is the same as for the *quick step*.

Distances of 100 and 200 yards will be marked on the drill ground, and non-commissioned officers and men practised in keeping correct time, and length of pace.

Marching in slow time will be practised only when required for ceremonial purposes.

12. *The drum and pace stick.*

Recruits are not to be taught to march without the constant use of the drum, and pace stick.

The drum will first beat the time, in which the men are to march, when the squad is halted ; then, occasionally, when it is in motion. While the drum is beating, at the halt, the men will give their attention to the time ; when it ceases, the instructor will put the squad in motion.

In order to ascertain whether the time is beaten correctly, a pendulum should be used.

The length of the pace in marching will be corrected with the pace stick, the accuracy of which should occasionally be tested by measurement.

13. *Position in marching.*

1. In marching, the man will maintain the position of the head and body, as directed in Sec. 5. He must be well balanced on his limbs. In quick time the arms must not be stiffened, but should swing naturally from the shoulder, the right arm swinging forward with the left leg, and the left arm with the right leg. The movement of the leg must spring from the haunch, and be free and natural.

The legs should be swung forward freely and naturally from the hip joints, each leg as it swings forward being bent sufficiently at the knee to enable the foot to clear the ground. The foot should be carried straight to the front, and without being drawn back, placed firmly upon the ground with the knee straight, but so as not to jerk the body.

2. Although several recruits may be drilled together in a squad with intervals, they must act independently, precisely as if they were being instructed singly. They will thus learn to march in a straight line, and to take a correct pace, both as regards length and time, without reference to the other men of the squad.

Before the squad is put in motion, the instructor will take care that each man is square to the front and in correct line with the remainder. The recruit will be taught to take a point straight to his front, by fixing his eyes upon some distant object, and then observing some nearer point in the same straight line, such as a stone, tuft of grass, or other object. The same procedure will be followed by the man on the named flank or by the named number, when marching in other formations. (See Sec. 23.)

14. *Marching in quick time.*

1. *The quick march.*

QUICK—MARCH.

The squad will step off together with the left foot, in quick time, observing the rules in Sec. 13.

2. *The halt.*

SQUAD—HALT.

The moving foot will complete its pace, and the other will be brought smartly up in line with it, without stamping.

3. *Stepping out*

STEP—OUT.

The moving foot will complete its pace, and the man will lengthen the pace by 3 inches, leaning forward a little, but without altering the time.

Note.—This step is used when a slight increase of speed, without an alteration of time, is required ; on the command *quick—march* the usual pace will be resumed.

4. *Stepping short.*

STEP—SHORT.

The foot advancing will complete its pace, after which the pace will be shortened by nine inches until the command *quick—march* is given, when the quick step will be resumed.

5. *Marking time.*

MARK—TIME.

The foot then advancing will complete its pace, after which the time will be continued, without advancing, by raising each foot alternately about six inches, keeping the feet almost parallel with the ground, the knees raised to the

front, the arms steady at the sides, and the body steady. On the command *forward* the pace at which the men were moving will be resumed.

6. *Stepping back from the halt.*

—PACES STEP
BACK—
MARCH.

Step back the named number of paces of thirty inches straight to the rear, commencing with the left foot, observing the rules in Sec. 13.

Note.—Stepping back should not exceed four paces.

15. *Changing step.*

1. *When on the march.*

CHANGE—STEP.

The advancing foot will complete its pace, and the ball of the rear foot will be brought up to the heel of the advanced one, which will make another step forward, so that the time will not be lost, two successive steps being taken with the same foot.

2. *When marking time.*

CHANGE—STEP.

Make two successive beats with the same foot.

16. *Marching in double time.*

1. *The double march.*

Step off with the left foot and double on the toes with easy swinging strides, inclining the body slightly forward but maintaining its correct carriage. The feet must be picked up cleanly from the ground at each pace and the thigh, knee, and ankle joints must all work freely and without stiffness. The whole

DOUBLE--MARCH.

body should be carried forward by a thrust from the rear foot without unnecessary effort. The heels must not be raised towards the seat but the foot carried straight to the front and the toes placed lightly on the ground. The arms should swing easily from the shoulders and should be bent at the elbow, the forearm forming an angle of about 135 degrees with the upper arm (*i.e.* midway between a straight arm and a right angle at the elbow), fists clenched, backs of the hands outward, and the arms swung sufficiently clear of the body to allow of full freedom for the chest. The shoulder should be kept steady and square to the front and the head erect.

2. *The halt.*
SQUAD—HALT.

As in Sec. 14, 2, at the same time dropping the hands to the position of *attention*.

3. *Marking time.*
MARK—TIME.

Act as in Sec. 14, 5, the arms and hands being carried as when marching in double time, but with the swing of the arms reduced.

17. *The side step.*
1. RIGHT (OR LEFT)
CLOSE—MARCH.
OR

Each man will carry his right foot 15 inches direct to the right and instantly close his left foot to it, thus completing the pace; he will proceed to take the next pace in the same

—PACES RIGHT
(OR LEFT)
CLOSE—MARCH.

manner. Shoulders to be kept square, knees straight, unless on rough or broken ground. The direction must be kept in a straight line to the flank.

2. *The halt.*
SQUAD—HALT.

On the command *halt*, which will be given when the number of paces has not been specified, the men will complete the pace they are taking, and remain steady.

Note.—Men should not usually be moved to a flank by the side step more than twelve paces.

18. *Turning
when on the
march.*

1. RIGHT (OR LEFT)
—TURN.

Each man will turn in the named direction, and move on at once without checking his pace.

Note.—A man will always turn to the right on the left foot ; and to the left on the right foot. The word *turn* will be given as the foot on which the turn is to be made is coming to the ground ; if it is not so given the man will move on one pace and then turn.

2. ABOUT—TURN.

The man will turn right about on his own ground in three beats of the time in which he is marching. Having completed the turn about the man will at once move forward, the fourth pace being a full pace.

3. RIGHT(ORLEFT) | On the word *incline*, make a half-
 —INCLINE. | turn in the required direction.

SQUAD DRILL IN SINGLE RANK.

19. *Formation of squads in single rank.*

Recruits will at this stage be formed in single rank without intervals, each man occupying a lateral space of 30 inches. The accuracy of the spaces should be frequently tested. Squads will fall in and dress by the left unless otherwise ordered.

20. *Dressing in single rank.* | When men are on the alignment they
 No word of com- | have to occupy, they will, except at
 mand will be | ceremonial drill, take up their own
 given. | dressing without orders. When a squad
 | is halted each man, except the man on
 | the named flank will look towards the
 | flank by which he is to dress with a
 | smart turn of the head and, commencing
 | with the man nearest the flank by
 | which the dressing is made, each will
 | move up or back to his place succes-
 | sively. Each man will look to his front
 | as soon as he has got his dressing.
 | (See Sec. 8.)

21. *Numbering a squad.* | The squad will number off from the
 SQUAD—NUMBER | right, the right hand man calling out
 | "one," the next on his left "two," and
 | so on.

22. *Opening and closing a squad.*

OPEN RANKS—
MARCH.

The odd numbers will take two paces forward; when the paces are completed the men who have moved (except the left hand man of each rank) will look to the left and correct the dressing quickly, looking to the front as soon as the dressing is correct.

REFORM RANKS
—MARCH.

☐ The odd numbers will step back two paces, when the paces are completed the squad will dress as in Sec. 20.

23. *Marching in single rank.*

1. BY THE RIGHT
(OR LEFT OR BY
No. —)
QUICK—MARCH.

As in Sec. 14. Each man will preserve his position in the general line by an occasional glance towards the directing man (*see* Sec. 13)

2. BY THE RIGHT
(OR LEFT OR BY
No. —)
DOUBLE—
MARCH.

As in para. 1 above, but in double time.

24. *Changing the pace from quick to double time, and vice versa.*

1. DOUBLE—
MARCH.

Complete the next pace in quick time and then continue in double time as in Sec. 16.

2. QUICK—
MARCH.

Complete the next pace in double time and then break into quick time, dropping the arms to their usual position.

25. *The diagonal march* (Plate I. fig. 1).
RIGHT (OR LEFT)
—INCLINE.

Each man will make a half turn in the required direction, and, if on the march, will move diagonally in that direction.

26. *Changing direction.*
(Plate I. fig. 2).
RIGHT (OR LEFT)
—FORM.

The right (or left) hand man will make a full turn in the required direction, and the remainder a half turn.

QUICK—MARCH.

The right (or left) hand man will mark time and the remainder will mark time when they come up into the new alignment.

Note.—Should the squad be required to halt on reaching the new alignment the command will be preceded by the caution AT THE HALT; each man will then halt and take up his dressing on reaching the new alignment. If the squad is on the move the command QUICK MARCH is omitted.

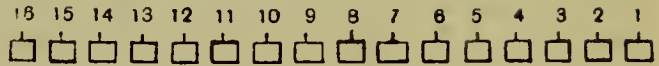
FOR—WARD.

The squad will move forward in the new direction.

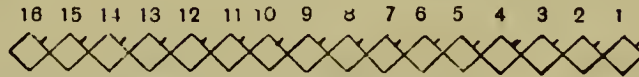
PLATE 1.

THE DIAGONAL MARCH.

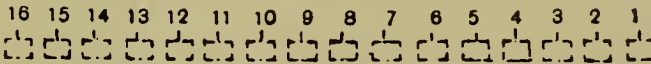
Fig. 1.
Right Incline.



Second Position.



During Movement.



First Position.

Fig. 2.
Changing Direction.
At the Halt, Right Form.

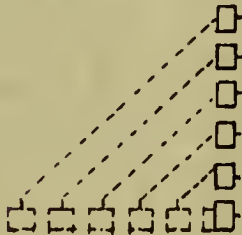
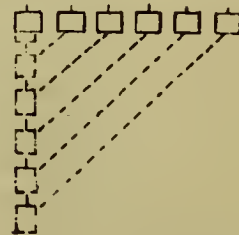


Fig. 3.
Forming up.
On the Right, Form Squad.



Note.—Forming at any angle will be practised. If necessary the first three men may be dressed at the required angle and the remainder be ordered to form upon them.

**27. Marching as
in file.**

1. *From the halt.*
RIGHT (OR LEFT)
—TURN.

As in Sec. 9. The men will now cover each other exactly. The head of the man immediately in front of each man, when he is correctly covered, will conceal the heads of all the others in front of him.

QUICK—MARCH.

The whole will step off, without increasing or diminishing the distance between each other.

Note.—This will also be practised on the move.

**2. Changing
direction.**

- RIGHT (OR LEFT)
—WHEEL.

The leading man will move round a quarter of the circumference of a circle having a radius of four feet. The other men, in succession, will follow in his footsteps without increasing or diminishing their distances from each other or altering the time, but shortening the pace a little with the inner foot.

**3. REAR FILES—
COVER.**

If the squad is halted or ordered to *mark time* when only a part of the men have wheeled into the new direction, the men who have not yet wheeled will cover off on those who have by making an incline to the right or left.

4. *Forming squad
on the move.*
(Plate I. fig. 3)
ON THE RIGHT
(OR LEFT)—
FORM SQUAD.

The leading man will mark time, the remainder will make a partial turn in the named direction, and form upon him, marking time as they come into the line.

FOR—WARD, BY
THE RIGHT (OR
LEFT).

The squad will move on in line in the direction in which it was originally marching in file.

5. *Forming squad
at the halt.*
AT THE HALT ON
THE RIGHT
(OR LEFT)—
FORM—SQUAD.

The leading man will halt, the remainder will make a partial turn in the named direction and form upon him, halting and dressing as they come into the line.

SQUAD DRILL IN TWO RANKS.

28. *Formation of a squad in two ranks.*

The squad will now be formed for drill in two ranks. The men will take their places in succession, commencing from the left unless they are ordered to form on the other flank, each occupying a lateral space of 30 inches. Each man of the rear rank will be placed 60 inches from the man in front of him, measuring from heel to heel, and will cover him correctly, the two men thus placed forming A FILE. When the squad consists of an uneven number of men, the third man from the left of the front rank will be a BLANK

(or incomplete) FILE, that is, he will have no rear rank man. Squads will dress by the left unless otherwise ordered. The instructions for dressing by the left in the following sections may be varied so as to apply to dressing by the right.

29. Dressing.

No word of command will be given.

When a squad is halted each man of both the front and rear ranks, except the left file, will look towards the left with a smart turn of the head, and will move up or back to his place successively, commencing with the file nearest the left file. Each man will look to his front as soon as he has got his dressing.

**30. Numbering
a squad.**

SQUAD—NUMBER

The men of the front rank will number off smartly as in Sec. 21.

Each rear rank man will listen to the number given by his front rank man, which number will also be his own.

**31. Opening and
closing a squad.**

OPEN RANKS
—MARCH.

The odd numbers of the front rank will step forward two paces, the even numbers of the rear rank will step back two paces; as soon as the paces are completed the men who have moved (except the left hand man of each of the four ranks) will look to the left and correct the dressing quickly, looking to the front as soon as the dressing is correct.

REFORM RANKS
—MARCH.

The odd numbers of the front rank will step back two paces, the even numbers of the rear rank will step forward two paces, and, as soon as the paces are completed, the squad will dress by the left.

32. *Marching in line.*

1. BY THE RIGHT
(OR LEFT) QUICK
(OR DOUBLE)—
MARCH.

The whole will step off, the front rank man of the file on the named flank taking a point to march on. The men of each rank, except the directing file, will glance occasionally to the named flank to maintain their dressing. The men of the rear rank will also preserve their covering and distance from the front rank.

If there is a *blank file*, he will always be with the front rank; when the squad is turned about on the march he will step out to gain his place in the new front rank; if the squad is turned about at the halt he will take two paces forward after turning about.

Note.—When a squad turns about the ranks are thereby changed, and the former rear rank becomes the front rank; the former front rank, the rear rank.

When, however, the squad is required to fall back for a short distance only, with a view of again turning in the original direction, ranks will not be

changed. In this case the commands will be: THE SQUAD WILL RETIRE, ABOUT—TURN, and on completion, THE SQUAD WILL ADVANCE, ABOUT—TURN.

2. *The diagonal march.*

RIGHT (OR LEFT)
—INCLINE.

As in Sec. 25.

The men of the rear rank will preserve their relative positions with the men of the front rank, in order that they may cover correctly when they are again turned into line.

3. *Changing direction.*

RIGHT (OR LEFT)
—FORM.

The right (or left) hand man of the front rank will make a full turn in the required direction and the remainder of the front rank a partial turn. The rear rank will stand fast.

QUICK—MARCH.

The right (or left) hand man of the front rank will mark time, the remainder will step off, the men of the rear rank conforming to the movements of their front rank men. The whole will mark time when they come into their places in the new alignment.

FOR—WARD.

The whole will move off in the new direction.

Notes.—1. If the squad is on the march the command QUICK—MARCH is omitted.

2. If required to halt after forming, the command will be AT THE HALT—

RIGHT (or LEFT) FORM, the right or left hand man will then stand fast instead of marking time and the remainder will halt and dress as they come up.

3. Squads may be formed half or quarter right or left, on the command HALF (or QUARTER) RIGHT (or LEFT)—FORM.

**33. *Marching
in file.***

**1. *Turning
into file***

RIGHT (OR LEFT)
—TURN

The whole will turn to the right (or left), and, if on the march, lead on in that direction without checking the pace. The men of the rear rank will dress by their front rank men.

**2. *Changing
direction.***

RIGHT (OR LEFT)
—WHEEL.

The inner man of the leading file will move round a quarter of the circumference of a circle having a radius of four feet, stepping short to enable the outer man of the file to wheel with him. When the quarter circle is completed the file leads on in the new direction. The other files in succession will follow in the footsteps of the leading file without increasing or diminishing their distances from each other or altering the time.

**3. *Forming
squad.***

ON THE RIGHT
(OR LEFT)

The right hand man of the leading file, if the formation is to the right ; or the left hand man of the leading file, if

FORM—SQUAD.

the formation is to the left, will mark time.

The remainder will make a partial turn in the named direction and form upon him, marking time as they come into the new alignment.

FORWARD
BY THE RIGHT
(OR LEFT).

The squad will move on in line in the direction in which it was originally marching in file.

Note.—1. If desired to halt on completion, the command will be AT THE HALT, ON THE RIGHT (or LEFT) FORM—SQUAD. The right or left hand man of the leading file will halt and the remainder will halt and dress as they reach their places.

2. The squad may be formed obliquely to the line of march by the command, HALF (or QUARTER) RIGHT (or LEFT) FORM—SQUAD.

4. *Forming
single file
and two deep.*
ADVANCE IN
SINGLE FILE
QUICK—MARCH.

The front rank man of the leading file will march off followed by his rear rank man, who will be followed by the front rank man of the second file and so on.

Note.—1. If the squad is marching in file, the command will be, ADVANCE IN SINGLE FILE, when the front rank man of the leading file will lead on, the

remainder marking time to get into their places and then following on as described above.

2. A squad may similarly advance in single file from fours.

FORM—Two
DEEP.

The leading man will mark time, the remainder of the squad will regain their positions in file, marking time as they reach their places.

FORWARD.

The squad will move forward in file.

Note.—If it is desired to halt on completion of the movement, the command will be AT THE HALT FORM—Two DEEP, when the leading man will halt, the remainder halting as they reach their places in file.

34. *The formation of fours and elementary training in march discipline.*

1. *Column of Fours* is the ordinary marching formation of infantry on the road. The greatest attention should be paid to training the recruit to keep the prescribed distance from, and to cover exactly, the man in front. Order, comfort, and the reduction of fatigue, depend on the maintenance of exact distance by the section of fours. Exact covering and dressing when moving in fours is to be kept even when marching at ease unless orders to the contrary are issued.

Odd numbers are right files, and even numbers left files.

2. In order that the left four may always be complete, the file on the left of a squad will always act as a left file, and the second file from the left as a right file, in forming fours.

3. A test of good marching in fours is the position of the men when they turn into line. If there are no gaps or irregularities in the line, and the squad occupies the same frontage as before it formed fours the marching is good. This test should be frequently applied during the instruction of recruits, and the slightest carelessness as regards the maintenance of the exact distance should be checked at once.

4. Units moving in fours will march on the extreme left of roads, and, during halts, men will fall out on the left of the road.

35. *Forming fours* (Pl. II).

1. *In line in
two ranks at
the halt.*

FORM—FOURS.

FORM—TWO-
DEEP.

2. *To the right
or left.*

FORM—FOURS.

The left files will take a pace of 30 inches back, and then a side pace of 30 inches, so as to cover their right files, the first pace being taken with the foot furthest from the right files. In this formation the squad will stand in fours.

The left files will move to their original position in line by taking a side pace of 30 inches, and a pace forward of 30 inches; or, if the squad has been turned about while in fours, a side pace and a pace back.

As above.

PLATE II.

FORMATION OF FOURS.

Fig. 1

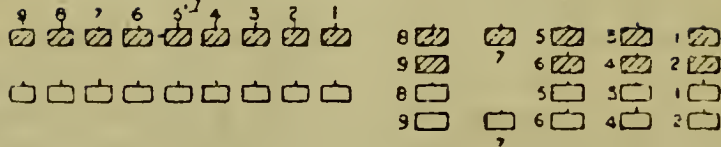
Squad with an Odd File

Fig 2

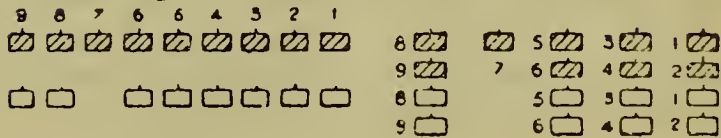
Squad with a Blank Odd File

Fig 3

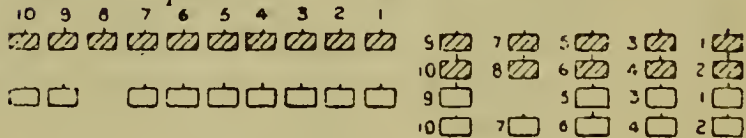
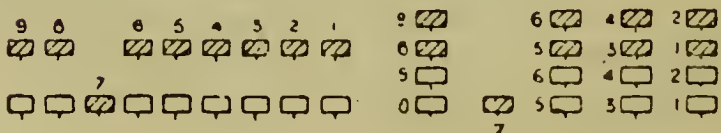
Squad with a Blank Even File.

Fig 4.

When Squad is Turned about.

RIGHT (OR LEFT).

Each man of the squad will turn in the direction named.

3. *To reform line.*

RIGHT (OR LEFT)
—TURN.

Each man of the squad will turn in the direction named, and then *form two-deep*, as described above.

Note.—If it is required to remain in fours, the word of command will be IN FOURS, RIGHT (OR LEFT)—TURN.

4. *When on the march in line.*

FORM—FOURS.
RIGHT (OR LEFT).

As in (2) and (3) but the right files will mark time two paces while the left files are moving to their places.

Note.—Should the command RIGHT (OR LEFT) INCLINE be given instead of RIGHT (OR LEFT) the squad will incline instead of turning in the required direction.

When inclining the squad will remain in fours.

5. *When in file, at the halt or on the march.*

FORM—FOURS.

The left files will move forward into their position in fours if a right file is leading, or back if a left file is leading.

If on the move, the right files will mark time two paces.

FORM TWO—
DEEP.

The left files will move up or fall back into their places in file. If on the move, the right files will mark time two paces.

Note.—When a squad is turned from line to a flank in fours, if to the right, the left will direct, and if to the left, the right will direct, without further word of command, and each section of fours will dress accordingly.

36. *The passage of obstacles.*

1. When a stream, ditch, bank or other obstacle is to be crossed it will generally be found better to increase rather than diminish the front by causing the men to open out gradually before they arrive at the obstacle.

2. It is frequently advisable to point out a place on the far side of the obstacle, and order the men to form up in a named formation at that place; each man will then find his own way across.

3. If a line is to pass a narrow place, its front may be reduced by forming fours, file, or single file to a flank or inwards. Fours may be formed, and these fours closed to a flank or on the centre.

4. If a narrow place has to be passed through in column it is important to avoid checks. It is therefore advisable to increase the pace during the passage, if it is not so long as to cause undue fatigue to the men.

37. *Movements in fours.*

1. *Changing direction.*
RIGHT (or LEFT)
—WHEEL.

The inner man of the leading four will move round a quarter of the circumference of a circle having a radius of four feet, stepping short to enable the other men of the four to wheel with him, when the quarter circle is

completed the four leads on in the new direction. The other fours in succession will follow in the footsteps of the leading four without increasing or diminishing their distances from each other or altering the time.

2. REAR FOURS—
COVER.

If required to halt or to mark time before the whole squad has wheeled into the new direction, the fours which have not yet wheeled will cover off by moving to their places in rear of the fours which have wheeled, by making an incline to the right or left.

3. *Forming squad
when moving
to a flank.*

ON THE RIGHT (OR
LEFT) FORM—
SQUAD.

The squad will first form two deep, and will then act as a squad marching in file (*see* Sec. 33, 3).

FOR—WARD.

The squad will move on in line in the direction in which it was originally marching in fours.

See notes to Sec. 33, 3, which apply equally.

38. *Dismissing*
DIS—MISS.

The squad will turn to the right, and, after a pause, break off quietly and leave the parade ground.

If an officer is on parade the men will salute together as they break off.

CHAPTER II.

SECTION DRILL.

39. *Organization of the section.*

A section is divided into two squads, each under a non-commissioned officer or selected private. Should the total strength of a section be less than twelve, the company commander may use his discretion as to its sub-division. The squads of a company are numbered from one to eight beginning at No. 1 Section.

40. *Object of section drill.*

The object of section drill is to train the individuals forming the section to work together, to secure instant obedience to orders, and to create discipline ; to perfect the section commander in handling his men both in close and extended order, so that, when the section takes its place in the company it will be able to carry out any operation which the company commander may direct without hesitation or confusion, or, if left to the initiative of its own commander it may be able to operate for the common good.

The section will be drilled in such movements of company drill as are applicable, the words of command being the same, except that the word *section* will be substituted for *company* and the word *squad* for *section*.

41. *General rules.*

1. The section may be formed as follows :—

- i. In line.
- ii. In column of squads.
- iii. In column of fours.
- iv. In file.

2. The section commander, when the section is acting alone, will place himself in the best position for supervision.

His normal position and that of the squad commanders when the section is working with other sections is shown in Plate III.

42. *Inspection and telling off.*

1. The section will fall in in line, by the left unless otherwise ordered, with the rear rank at three paces distance from the front rank for inspection by its commander. The inspection will usually be carried out as follows:—

SECTION—ATTEN—TION.

The section commander will then inspect the appointments, clothing, &c.

BY SQUADS—NUMBER.

Each squad will number off simultaneously as in Sec. 30.

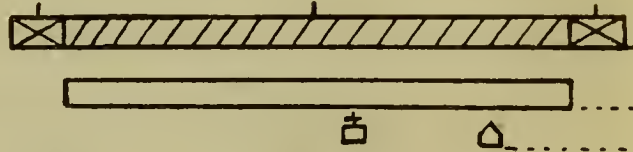
FORM—FOURS. FORM TWO—DEEP.

The section will then be turned about and proved as above ; when it has been proved it will be turned about again. When the section is turned about supernumeraries will gain their places by doubling round the flanks of the section.

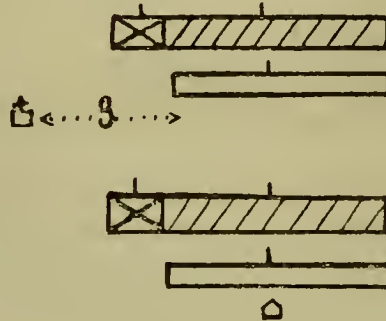
PLATE III.

POSITIONS OF COMMANDER, ETC., IN A SECTION.

(1)
SECTION
IN LINE.



(2)
COLUMN
OF
SQUADS.



(3)
COLUMN
OF
FOURS
BY THE
LEFT.



(4)
FILE
BY THE
LEFT.



NOTE.—In column of fours by the right, the squad commander of the leading squad is in front of the right hand man of the leading section of fours.

43. *Extending
from the halt.*
To—PACES—
EXTEND.
(OR TO THE RIGHT
(OR LEFT)
To—PACES—
EXTEND.)

The front rank man of the centre, left or right file, will remain halted. The remainder will turn outwards or to the named flank and extend in double time.

The rear rank men will form on the left of their front rank men.

Each man is responsible that the given number of paces separate him from the next man to him towards the centre, or towards the directing man.

Note.—A section may be extended similarly from a named man.

44. *Extending
on the move.*
To—PACES
—EXTEND.
(OR TO THE RIGHT
(OR LEFT)
To—PACES—
EXTEND.)

The front rank man of the centre file (or of the left or right file) will continue to advance, the remaining files will turn outwards (or to the named flank) and will double out to their positions as in Sec. 43, when each man will break into quick time and advance in the original direction.

45. *A Section
marching in fours
extending to a
flank.*
To THE RIGHT
(OR LEFT)
To—PACES—
EXTEND.

The whole will form two deep.

If the extension is to the right the left man of the leading file will continue to advance, the other man of the file forming up on his right at the number of paces ordered. The remainder will make a partial turn in the required direction, and will double into their positions.

The left man of each file will form on the left of the other man of the same file. As each man reaches his position he will break into quick time and continue to advance in the original direction.

If the extension is to the left the right man of the leading file will continue to advance, and the right man of each file will form on the right of the other man of the same file as above.

Note.—1. If when working with two squads, it is desired to extend outwards, one squad may be ordered to extend to the right, the other to the left.

2. Should it be required to form in a direction oblique to the line of advance, the words HALF (OR QUARTER), RIGHT (OR LEFT) will precede the commands given in the above sections.

46. *Movements in line in extended order.*

1. *To increase or decrease the extension.*

TO—PACES
—EXTEND
(OR CLOSE).

The men will increase or decrease their extension from the centre, or from or to a named flank or man.

2. *Inclining.*
 RIGHT
 (OR LEFT)
 INCLINE.

Each man will incline to the right or left.

Note.—If a second order is given to incline in the same direction, the section will then move as in file, the intervals between the men being preserved.

3. *Changing direction.*
 CHANGE
 DIRECTION,
 RIGHT
 (OR LEFT)
 OR
 HALF RIGHT
 (OR HALF LEFT).

The right (or left) hand man will turn in the named direction and continue in quick time, the remainder will double direct to their new positions and break into quick time when on the new alignment.

4. *Closing to two ranks.*
 AT THE HALT—
 ON THE RIGHT,
 (OR LEFT)
 CLOSE.

The centre (right or left hand) man will halt, the remainder will close on him in quick time and take up their original positions, each man halting and standing at ease.

Note.—A section may be closed on the move by omitting the words AT THE HALT, the centre, right or left man, leading on, and the remainder doubling to their positions in line.

CHAPTER III.

COMPANY DRILL.

47. *Preliminary remarks.*

1. *Organization of the company.*—A company is permanently divided into two half companies, the right and the left, each under an officer if available. Each half company is permanently divided into two sections, which are numbered from one to four (*see* Sec. 39).

This organization will be maintained both in barracks and in the field for all duties, including the detailing of fatigues. The men will thus acquire the spirit of true comradeship, and learn to repose confidence in each other ; while the non-commissioned officers will be accustomed to command, and to act when necessary on their own judgment.

2. *Object of company drill.*—The object of company drill is, firstly, to enable the company to carry out any movement or formation the commander may direct both by day and night, whether laid down in this manual or improvised to meet the circumstances of the moment, without hesitation or confusion ; secondly, to inculcate discipline and instant obedience to commands or signals.

48. *General rules.*

1. The company may be formed as follows :—

- i. In line. Plate IV, Fig. 1.
- ii. In company column. Plate V. Fig. 1.
- iii. In column of squads.
- iv. In column of half companies. Plate IV, Fig. 2.
- v. In column of fours. Plate V. Fig. 2.
- vi. In file.

Company column is the normal formation for a company, when acting alone, or at an interval from other companies.

In line the left squad commander of the half company, on the right is the centre of the company.

2. *Position of commanders and supernumeraries.*—The company commander, when the company is acting alone, is on the march, or is working at an interval from other companies, will place himself where he can best exercise supervision. The sergeant acts as the assistant of the company commander.

The normal positions of all commanders and supernumeraries in the different formations are shown on Plates IV. and V.

3. A column of half-companies, a company column and a column of fours will dress and march by the left unless otherwise ordered. In other formations the flank by which men are to dress and march will be named.

4. Formation into and from column of half-companies is carried out in the same manner as formation into and from company column, the words *column of half-companies* being substituted for *company column*.

PLATE IV.

POSITIONS OF COMMANDERS, ETC., IN A COMPANY.

FIG. 1.

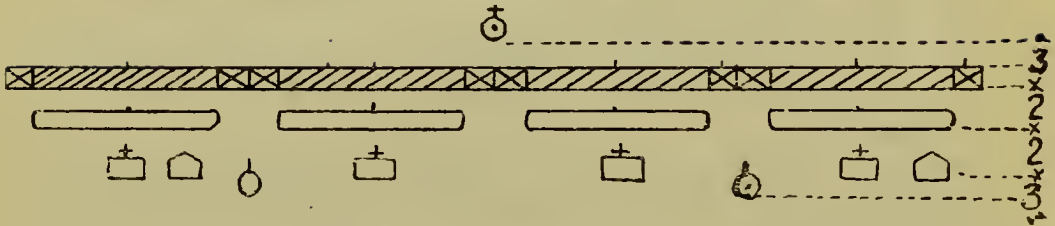
In Line.

FIG. 2.

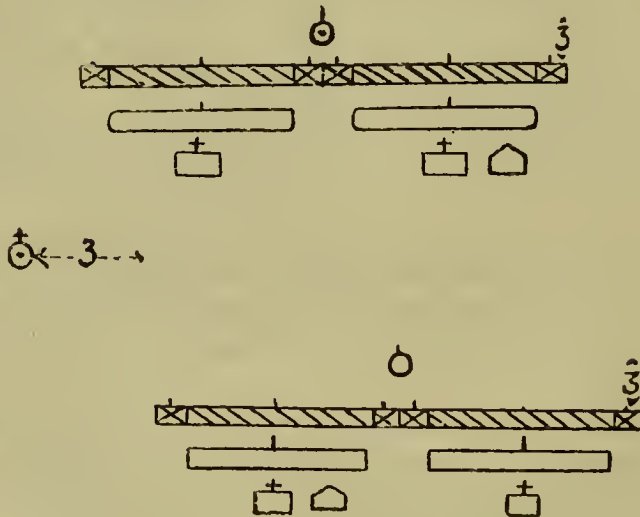
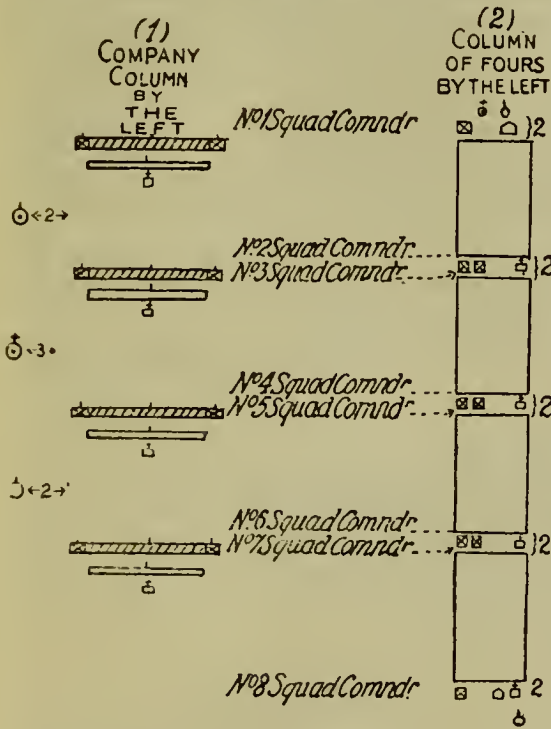
In Column of Half Companies.

PLATE V.

POSITIONS OF COMMANDERS, ETC.



Note.—In column of fours by the right, the Squad Commander of the leading Squad is in front of the right hand man of the leading section of fours.

5. Changes of formation can usually be carried out :—

i. From the halt halting on completion of the movement.

ii. On the move, halting on completion of the movement.

iii. From the halt, moving forward on completion of the movement.

iv. On the move, moving forward on completion of the movement.

6. The principles are the same in all cases, but the words of command differ slightly.

When the movements are to be performed as in i and ii, the command is preceded by the caution AT THE HALT.

As soon as movements as in iii and iv are completed, the command FORWARD is given.

In the following detail the cautions and commands for the various movements are given, as a rule, only in the form in which they are generally used, this does not preclude the use of the other forms detailed in i, ii, iii and iv, when applicable.

*7. Movements will be made in quick or double time ; if they are to be made at the double, the command *Double—March* will be used instead of *Quick—March*.

8. Movements and formations for which detail is given in fours can also be made in file.

9. Men are to be trained to act both in the front and in the rear rank.

10. Men will correct of their own accord any derangement in the order in which they fell in on parade.

11. Squad commanders are responsible for the maintenance of direction and distance of their squad.

12. The company will frequently be practised in reassembling when dispersed.

*49. *Inspection and telling off.*

Each section will be inspected and proved by its commander as described in Sec. 42. The commanders of half companies will supervise the inspection of their commands. The company commander supervising the whole or making such personal inspection as he thinks necessary.

* In the following sections cautions and words of command given by the company commander are in CAPITALS, those given by the section commanders are in *italics*.

50. Formations
from company
column.

1. Forming line
facing in the same
direction as the
column.

ON THE RIGHT
 (OR LEFT) FORM
 COMPANY, RE-
 MAINDER RIGHT
 (OR LEFT)—
 INCLINE, QUICK
 —MARCH.

The leading section will stand fast. The remaining sections, on the word *INCLINE*, will incline in the named direction.

On the command *QUICK—MARCH* the leading section will stand fast; the sections in rear will move off, and, when each section is clear of the section in front, the section commander will give the command *Right* (or *Left*) *Incline*, and, when in line with the leading section, *No. — Halt*.

Note.—If the company column is marching the command *DOUBLE—MARCH*, instead of *QUICK—MARCH*, will be given, and, on reaching the leading section, section commanders will give the command *Quick—March* instead of *Halt*.

2. Forming line
to a flank.

SECTIONS RIGHT
 (OR LEFT) FORM,
 QUICK—MARCH

Each section will form in the required direction as in Sec. 32, 3.

FORWARD, BY
 THE RIGHT (OR
 LEFT).

The company will move forward in line in the new direction as in Sec. 32, 3.

3. *Changing direction.*

CHANGE
DIRECTION
RIGHT
(OR LEFT).

The commander of the leading section will give the command *Right* (or *Left*) *Form*, and when the section is formed in the new direction, *Forward*.

The commander of each successive section will act similarly when his section reaches the point round which the leading section formed.

4. *A company column when in fours, forming column of fours on the right or left section:*

RIGHT (OR LEFT)
SECTION TO THE
FRONT, RE-
MAINDER RIGHT
(OR LEFT)
WHEEL.

The named section will continue to move forward. The others will wheel to the right (or left) and, on reaching the ground over which the leading section has moved, they will wheel successively to the right (or left) and follow each other in column of fours.

5. *A company column when in fours, forming line.*

ON THE RIGHT
(OR LEFT) FORM
SECTIONS.

Each section will form forward into line as in Sec. 37, 3.

FORWARD, BY
THE RIGHT (OR
LEFT).

The company will move forward in line.

6. *Advancing in
fours.*

FORM FOURS.

RIGHT (OR
LEFT).

SECTIONS,
RIGHT (OR LEFT)
WHEEL, QUICK
—MARCH.

51. *Formations
in or from line.*
1. *Marching in
line.*

BY THE RIGHT
(OR LEFT)
QUICK—MARCH.

ABOUT—TURN,
BY THE RIGHT
(OR LEFT)

The men will act as in Sec. 35.

The whole will turn in the named direction, officers and supernumeraries doubling to their places in fours (Pl. V.)

Each section will wheel in the named direction, the rear section following the leading section in column of fours.

On the caution BY THE RIGHT (or LEFT) the right (or left) squad commander will select points to march on.

On the command QUICK—MARCH, the whole will step off, marching by the named flank.

The whole will turn about, officers and supernumeraries of the flank sections doubling to their new positions round the flanks of the sections; squad commanders will make way for the supernumeraries of the centre sections, who will pass through the ranks by the outer flanks of their sections. In making way at the halt, squad commanders will take a pace to the rear and a pace outwards; and when on the move by checking the pace slightly and taking a pace outwards.

Squad commanders will then step up to their new positions.

The squad commander on the named flank will select points to march on.

Note.—If it is desired to turn about without changing ranks in order to retire for a short distance with a view to turning again in the original direction, the command will be: THE COMPANY WILL RETIRE, ABOUT—TURN, followed by THE COMPANY WILL ADVANCE, ABOUT—TURN.

2. *Changing direction.*

RIGHT (OR LEFT)
FORM, QUICK—
MARCH.

On the word FORM, the right (or left) squad commander will turn in the required direction, the front rank will make a partial turn in that direction.

On the command QUICK—MARCH the right (or left) squad commander will mark time, the remainder will step off, and will mark time when they reach the new alignment.

FORWARD, BY
THE RIGHT (OR
LEFT).

The company will move forward in the new direction.

3. *From the halt,
advancing in
company column.*

On the word TURN, all except the right (or left) section will turn in the named direction.

ADVANCE IN
COMPANY
COLUMN ON THE
RIGHT (OR LEFT)
REMAINDER
RIGHT (OR LEFT)
—TURN, QUICK
—MARCH.

On the command QUICK—MARCH, the right (or left) section will advance, the remainder marking time two paces and then leading on.

When the leading file of each successive section is in rear of the centre of the section of formation, the section commander will order *Left* (or *Right*) *Incline*; and when its rear file, in the case of a formation on the right (or leading file in the case of a formation to the left) is in rear of the left file of the leading section, he will order it to advance by the command *Left* (or *Right*) *Incline*.

Note.—If on the march, the words QUICK—MARCH are omitted.

4. *Forming company column to a flank.*

SECTIONS RIGHT
(OR LEFT) FORM,
QUICK—MARCH.

Each section will form in the named direction, as in Sec. 32, 3.

FORWARD.

The company column will move forward.

5. *Advancing in fours from a flank.*

FORM FOURS.

The men will act as in Sec. 35.

RIGHT (OR
LEFT).

The whole will turn in the named direction, officers and supernumeraries doubling to their places in fours. (Pl. V.)

QUICK —MARCH.

52. Formations
when moving in
fours.

1 *Forming com-*
pany column
moving in fours
in the same
direction.

COMPANY
COLUMN ON THE
LEADING SEC-
TION, RE-
MAINDER RIGHT
(OR LEFT) IN-
CLINE, DOUBLE
—MARCH.

The leading section will continue to advance, the remainder will incline in the named direction and double to their positions in column; when the leading four of each successive section is at section interval from, and in line with, the leading four of the section on its left, or right, each squad commander will give the command *Left (or Right) Incline Quick—March.*

2. *Forming for-*
ward into com-
pany column.

ON THE RIGHT
(OR LEFT) FORM
—SECTIONS.

The whole will form two deep, and then each section will form on the right (or left) as in Sec. 33, 3.

FORWARD.

The company column will move forward,

3. *Forming line.*
ON THE RIGHT
(OR LEFT) FORM
—COMPANY.

The whole will form two deep. The right-hand man of the leading file, if the formation is to the right; or the left-hand man of the leading file, if the formation is to the left, will mark time.

The remainder will make a partial turn in the named direction and form upon him, marking time as they come into the alignment.

Note.—Should a company marching to the right in fours, be ordered to form company on the right, or *vice versa*, thereby changing ranks, the officers and section commanders will at once gain their positions as in Sec. 51, 1.

FORWARD.

The company will move forward in line.

Note.—Columns of half companies may be formed similarly on the command ON THE RIGHT (OR LEFT) FORM HALF COMPANIES.

53. *Dismissing.*

The officers will first be ordered to fall out, when they will move in quick time to the commander of the parade, salute, and await his orders.

The company will then be dismissed by the commander as in Sec. 38.

54. *Route Marching.*

Officers leading.
Sergeants in
front of their
respective
squads.

Will be conducted in column of fours and in public thoroughfares keep on the left of the road so as not to block the traffic.

CHAPTER IV.

STRETCHER EXERCISES.

55. **General Remarks.**—The following exercises have been framed for the instruction of bodies of men, with a view to the careful handling of the wounded, and their transport on stretchers and in wagons. When the bearers have become thoroughly proficient in these exercises on the parade ground, the instructor will take every opportunity of regularly practising them under conditions approaching as far as possible to those obtaining in actual practice. The squads should be exercised over rough ground, and each man taught the various means for the transport and carriage of wounded. The important point to impress on every man, is that he may form the No. 4 of the stretcher squad, and so be responsible for the injured man, until he is brought directly under the notice of the medical officer. A syllabus of exercises suitable for the practical training of trained men in field work is given in the Appendix.

56. Men detailed for stretcher exercises must be well grounded in squad and company drill. Knee-caps will be worn on the left knee at all exercises in which the men require to kneel, except when otherwise ordered. Men or boys to act as “patients” will be provided with ground-sheets to protect their clothing.

57. For instructional work the men will be taught the exercises "by numbers" (where so indicated); when sufficiently advanced, the various movements will be done "judging the time," or "working by the right."

FORMATION.*

**Note*.—Previous to the parade the stretchers will be laid in a heap on the ground.

†*Note*.—In this and the following paragraphs the name of the movement is shewn in **thick type** in the left-hand column, and is followed by the caution or executive word of command, given by the O.C. or instructor, in SMALL CAPITALS. The right-hand column contains the detail.

When, however, the words of command are given by the No. 4 of the stretcher squad, these are shewn in an additional (second) column, and the detail given in the third column.

58. Sizing the Bearers.†

TALLEST ON THE RIGHT, SHORTEST ON THE LEFT, IN SINGLE RANK,—SIZE.

NUMBER.

ODD NUMBERS ONE PACE FORWARD, EVEN NUMBERS ONE PACE STEP BACK,—MARCH.

The whole will break off and arrange themselves according to their size in single rank, the tallest on the right and the shortest on the left, and take up their dressing by the right.

From right to left of the whole company.

The odd numbers will take one pace forward, and the even numbers will step back one pace.

NUMBER ONE
STAND FAST,
RANKS, RIGHT
AND LEFT—
TURN.

The odd numbers, with the exception of Number One will turn to the right, the even numbers to the left.

FORM COMPANY.
QUICK—MARCH.

The whole will step off, the even numbers wheeling round to the right and following the left-hand man of the odd numbers. No. 3 will form up two paces in rear of No. 1, No. 5, on the left of No. 1, No. 7, in rear of No. 5, No. 9 on the left of No. 5; and so on. The leading men of the even numbers will always form in the rear rank and the next man in the front rank. As the men arrive in their places they will turn to the left and take up their dressing.

59. Forming the Squads.

BY FOURS—
NUMBER.

The front rank will number from right to left in order.

SQUADS AT THE
HALT, LEFT—
FORM. QUICK—
MARCH. RIGHT
— TURN.

As in Sec. 51, 2.

RIGHT—DRESS.

The No. 1 of the squad on the right remains steady, the remaining Nos. 1 will each take up positions one pace

from the bearer on his right ; the other bearers will place themselves one pace in rear of and covering the bearer in front of them.

Notes.—If necessary, the bearers will be proved as follows :—

First Rank. No. 1 bearers, Stand-at-Ease.

Second Rank. No. 2 bearers, Stand-at-Ease.

And so on. But this should be unnecessary as bearers retain the same numbers in the squad as when numbered for forming squads. When proved in this manner, the squads will be called to ATTENTION before proceeding with the next movement.

Squads are composed of 4 bearers.

When the bearers are constantly employed in the same positions, the squads will be formed up on the command *By Squads, Fall—In*, when each bearer will take up his proper position on the No. 1 of the squad on the right.

NUMBER THE—
SQUADS.

No. 1 bearers number from right to left. .

60. Supplying Stretchers.

NO. 3 BEARERS,
RIGHT (OR LEFT)

The No. 3 bearers will march by the shortest route to the pile of stretchers ;

—TURN.
SUPPLY STRET-
CHERS, QUICK—
MARCH.

PLATE VI.



“Stand to
Stretchers.”
(Two).

(THREE).

each bearer in turn will lay hold of the near handle of a stretcher, raise it to a perpendicular position in front of him, runners to the front ; stoop, grasp the lower runners with his right hand and place the stretcher on his right shoulder at the slope ; rise to the erect position and lead on, stepping short.*

As soon as the last bearer has provided himself with a stretcher he will give the command *About—Turn*. The whole will turn about, and rejoin their squads in quick time, halting without further word of command as they arrive in their places. Taking the time from the leading bearer they turn to the right (or left).

The lower handles will be rested on the ground, the stretchers held perpendicularly.

The bearers will place the stretchers on

* When using the “Furley” stretcher, which is fitted with an overlay of canvas to contain the pillow, care should be taken that this end is uppermost and always to the rear of the squad.

the ground to the right of the squad by passing the lower handles forward, runners to the right, front-ends of the poles in line with the toes of No. 1 ; and rise together working by the right.

STAND TO—
STRETCHERS.

The Nos. 1 place themselves with their toes in line with the front-end of the poles, Nos. 3 with their heels in line with the rear-end of the poles, allowing sufficient room for turning. The remaining bearers will take up positions one pace in rear of and covering the bearers in front of them.

61. Lifting
and lowering
Stretchers.

LIFT—
STRETCHERS.

Nos. 1 and 3 stoop, grasp both handles of the poles firmly with the right hand, rise together holding the stretcher at the full extent of the arm, runners to the right.

LOWER—
STRETCHERS.

Nos. 1 and 3 stoop and place the stretcher quietly on the ground, runners to the right, and rise smartly together.

DISMISSING.

62. Storing
or piling
stretchers.

LIFT—
STRETCHERS.

As before detailed.

Nos. 1 and 3, IN
SUCCESSION
FROM THE RIGHT
(OR LEFT) DIS-
ENGAGE, QUICK
—MARCH.

The Nos. 1 and 3 on the flank named will disengage by taking a side-pace to the right, and move off in quick time followed by the remaining Nos. 1 and 3 in succession, dispose of their stretchers and rejoin their squads.

SQUADS, STAND
—EASY.

As in Sec. 7.

REMOVE—KNEE-
CAPS.

Knee-caps are removed and collected (if necessary).

SQUADS, ATTEN-
—TION. DIS-
MISS.

As in Sec. 38.

EXERCISES WITH CLOSED STRETCHERS.

**63. Advancing
and Retiring.**
LIFT—
STRETCHERS.

As before detailed.

BY THE RIGHT
(OR LEFT) QUICK
—MARCH.

The squads will advance, the rules for marching as in Secs. 32 and 33 being maintained, except that the hand holding the stretcher will be kept steady by the side.

SQUADS, ABOUT
—TURN.

The whole turn about, the stretcher being passed from one hand to the other by the Nos. 1 and 3.

CHANGE—
STRETCHERS.

If the squads are advancing, the Nos. 1 will pass the stretcher from one hand to the other behind them ; the Nos. 3 seeing this done, will pass the stretcher from one hand to the other in front of them, the Nos. 2 moving diagonally to their places. If the squads are retiring the Nos. 1 act as for Nos. 3, and the Nos. 3 as for Nos. 1. The remaining bearers in each case continue in their respective positions.

Note.—The stretcher must be held in the right hand when the command *About—Turn* is given. The runner must be to the left when the stretcher is in the left hand.

64. Moving to
a flank.

When it is necessary to make a quick movement to either flank for a short distance only, the command *Right (or Left)—Turn* will be given.

(See Detail).

When a squad is marching to the right and the command *About—Turn* is given, the Nos. 1 and 3 will seize the handles of the stretcher with the left hand and cut away the right while turning about, resuming the grasp with the right hand—back of the hand to the rear—after the turn has been completed.

65. Changing
Direction.

The No. 1 of the squad on the flank named will make a full turn to the right

AT THE
HALT, RIGHT
(OR LEFT)—
FORM.

(or left), the remainder of the Nos. 1 a partial turn in the required direction, the other bearers a partial turn in the opposite direction.

QUICK—
MARCH.

The No. 1 of the squad on the flank named will stand fast, the remainder step off by the shortest route to their places on the new alignment, halt, and take up their dressing independently.

Note.—When it is intended to move off in the new direction after forming, the words *At the Halt* will be omitted, the bearers will mark time when formed and the word *Forward* will be given.

66 Extending.
FROM THE
RIGHT
(LEFT, OR
ANY NAMED
SQUAD), TO
FOUR PACES
—EXTEND.

On the March.—On the word *Extend*, the named squad will continue to move on in quick time, the remainder will make a partial turn outwards, double to their places and turn to their front, breaking into quick time as they arrive there and taking up their dressing by the directing flank or squad. On the commencement of the movement the Nos. 4 bearers will place themselves on the right of the stretcher. (See Plate VII).

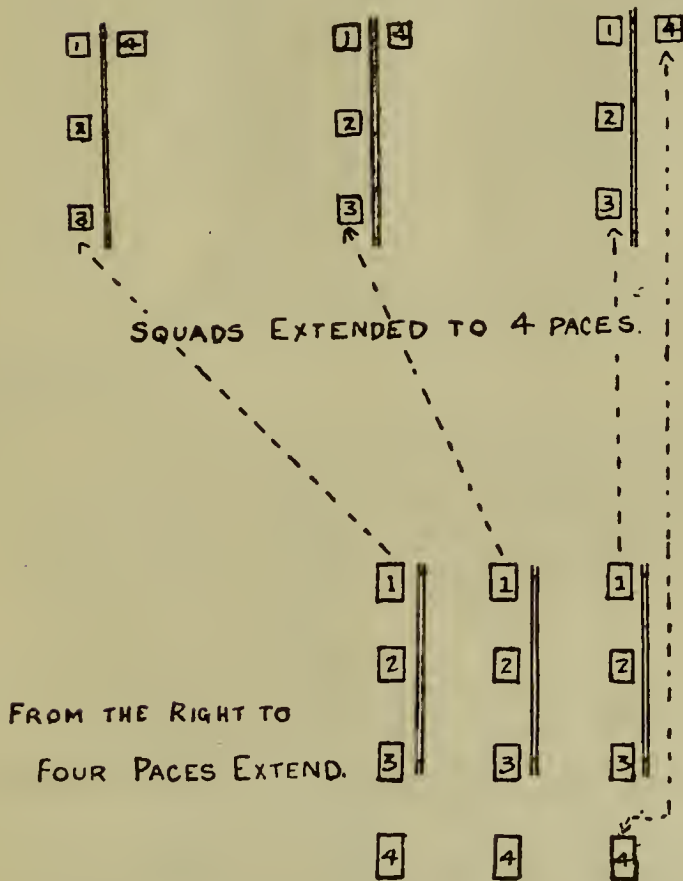
67. Closing.
ON THE
RIGHT (LEFT

The named squad will continue to move on in quick time, the remainder will make a partial turn in the direc.

OR ANY
NAMED
SQUAD),—
CLOSE.

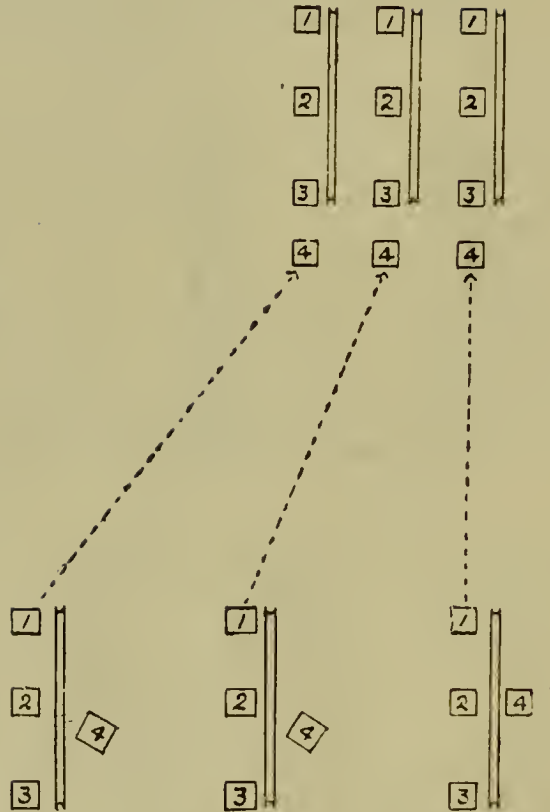
tion named, double to their places and turn to their front, breaking into quick time as they arrive there. The bearers on the right of the stretcher will drop back into their original places.

PLATE VII.



Position in Extended Order with Closed Stretchers.

PLATE VIII.



Closing from Extended Order.

(Bearers on the right of stretcher dropping back into their original places.)

EXERCISES WITH PREPARED STRETCHERS.*

**Note.*—The preparation of stretchers, and all movements with prepared stretchers, will be performed in extended order.

68. Preparing Stretchers.

PREPARE—
STRETCHERS.

The No. 4 bearers will take a side-pace to the right; Nos. 1 and 3 then turn to the right, kneel on the left knee, unbuckle the transverse straps and place the slings on the ground beside them, separate the poles and straighten the traverses; then, each takes up a sling, doubles it on itself, slips the loop thus formed on the near handle, and places the free ends over the opposite handle, grip-plate† uppermost.

(Two).

On the word *Two*, then rise and turn to the left together, working by the right.

69. Closing Stretchers.

CLOSE—
STRETCHERS.

Nos. 1 and 3 turn to the right, kneel on the left knee, remove the slings and place them on the ground beside them, push in the traverses, raise the canvas, and approximate the poles.

(Two).

On the word *Two*, they rise, lifting the stretcher, and face one another; place the handles of the poles between their thighs, runners to the right, and roll the canvas tightly over the poles to the right. (With the "Furley" stretcher the canvas is folded on the top of the poles).

†*Note.*—The older pattern sling has a buckle instead of a grip-plate.

(THREE).

On the word *Three*, each takes up a sling and passes the grip-plate end to the other, and, holding the grip-plate end in the left hand, threads the transverse strap through the loop of the other sling and buckles it tightly close to the runner, keeping the sling on top. Then, grasping both handles in the right hand, back of the hand to the right, they turn to the right in a slightly stooping position, rise, and turn to the left together. The No. 4 bearers then take a side-pace to the left.

**70. Lifting
and lowering
Stretchers.**

LIFT—
STRETCHERS.

On the word *Stretchers*, Nos. 1 and 3 stoop, grasp the doubled sling mid-way between the poles with the right hand and sweep it off the handles, rise, holding it at the full extent of the arm, grip-plate to the front.

(Two).

On the word *Two*, they take a side-pace between the handles and place the sling over the shoulders, dividing it equally, grip-plate to the right. The sling should lie well below the collar of the frock behind and in the hollow of the shoulders in front.

(THREE).

On the word *Three*, stoop, slip the loops over the handles, commencing with the left, and grasp both handles firmly.

(FOUR).

On the word *Four*, rise slowly together lifting the stretcher, No. 3 conforming closely to the movements of No. 1.

ADJUST—
SLINGS.

Nos. 2 turn about and step forward one pace ; Nos. 4 turn to the left ; they adjust the slings, taking care that they are well below the collar of the frock behind and in the hollow of the shoulders in front. The length of slings may be adjusted by means of the grip-plates if necessary.

(Two).

Nos. 2 turn about and step forward one pace ; Nos. 4 turn to the right.

Note.—This movement is required only when the Nos. 1 and 3 have not adjusted the slings correctly when lifting stretchers.

LOWER—
STRETCHERS.

Nos. 1 and 3 slowly stoop and place the stretchers gently on the ground, No. 3 conforming closely to the movements of No. 1 : slips the loops from the handles, and stand up.

(Two.)

On the word *Two*, they remove the slings from the shoulders, hold them as before described, take a side-pace to the left, and stand to stretchers.

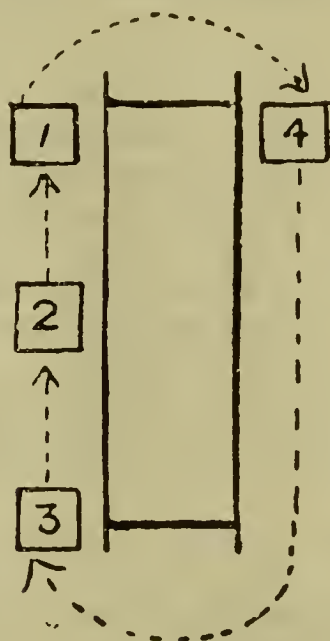
(Three).

On the word *Three* they stoop, place the slings on the handles as in "prepared stretchers," and rise together.

PLATE IX.

71. Changing Numbers.

CHANGE—
NUMBERS.



No. 4 will turn about ; the whole will step off together, No. 1 wheeling round by the front of the stretcher and taking up the position of No. 4. Each man halts in the position of the bearer whose place he has taken. The new numbers on the right of the stretcher will turn about.

Changing Numbers.

(Bearers on the right of stretchers turn about.)

72. Advancing and Retiring.

ADVANCE. * .

The whole move off together, stepping short, No. 3 stepping off with the right

* *Note.*—When squads are ordered to advance, the directing squad or flank will be named.

foot, the remainder with the left, the Nos. 1 and 3 keeping their knees bent, and raising the feet as little as possible. Special attention must be paid to the carriage of the stretcher so as to keep it level and avoid jolting and unnecessary swaying.

Note.—The Instructor will see that the directing squad marches on a given point, taking the correct pace as regards length, and that the remainder preserve their interval.

RETIRE.

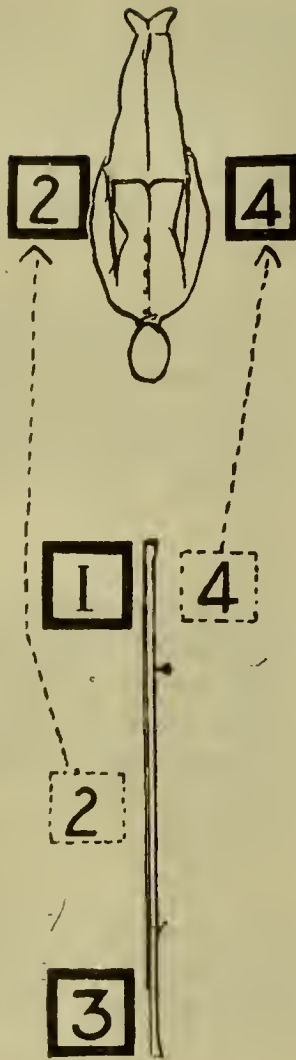
Each squad will move round by the right on the circumference of a circle of which No. 3 is the centre; Nos. 3 will mark time, turning gradually in the direction named, and the whole will move forward when square.

ADVANCE.

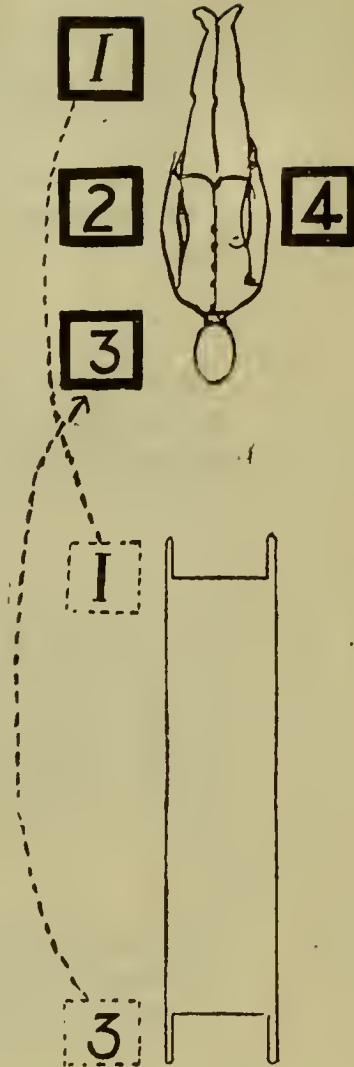
Each squad will resume the original direction to the front by a movement similar to that detailed for retiring.

73. Halting. HALT.

The whole will halt, care being taken not to jar or jolt the stretcher.



(Fig. 1). "Collect Wounded."
 The squads have advanced, halted, and lowered, stretchers. While the stretchers are being prepared by Nos. 1 and 3, the disengaged bearers are rendering assistance to the patient



(Fig. 2.) "Load Stretcher."
 The bearers in position ready to lift patient.

74. Inclining.
RIGHT (OR LEFT)
—INCLINE.

The Nos. 3 will mark time and turn gradually in the direction named, and the whole move forward when facing in the new direction.

Note.—If the incline is repeated the squads will be in COLUMN OF SQUADS with an interval of one pace between each squad.

**75. Forming
 into Line.**
(See Detail).

To form into line, the command will be given:—*On the Right (or Left), Form —Line.* See Detail for CHANGING DIRECTION, Sec. 65.

**76. Unloading
 and Loading
 Stretchers.**

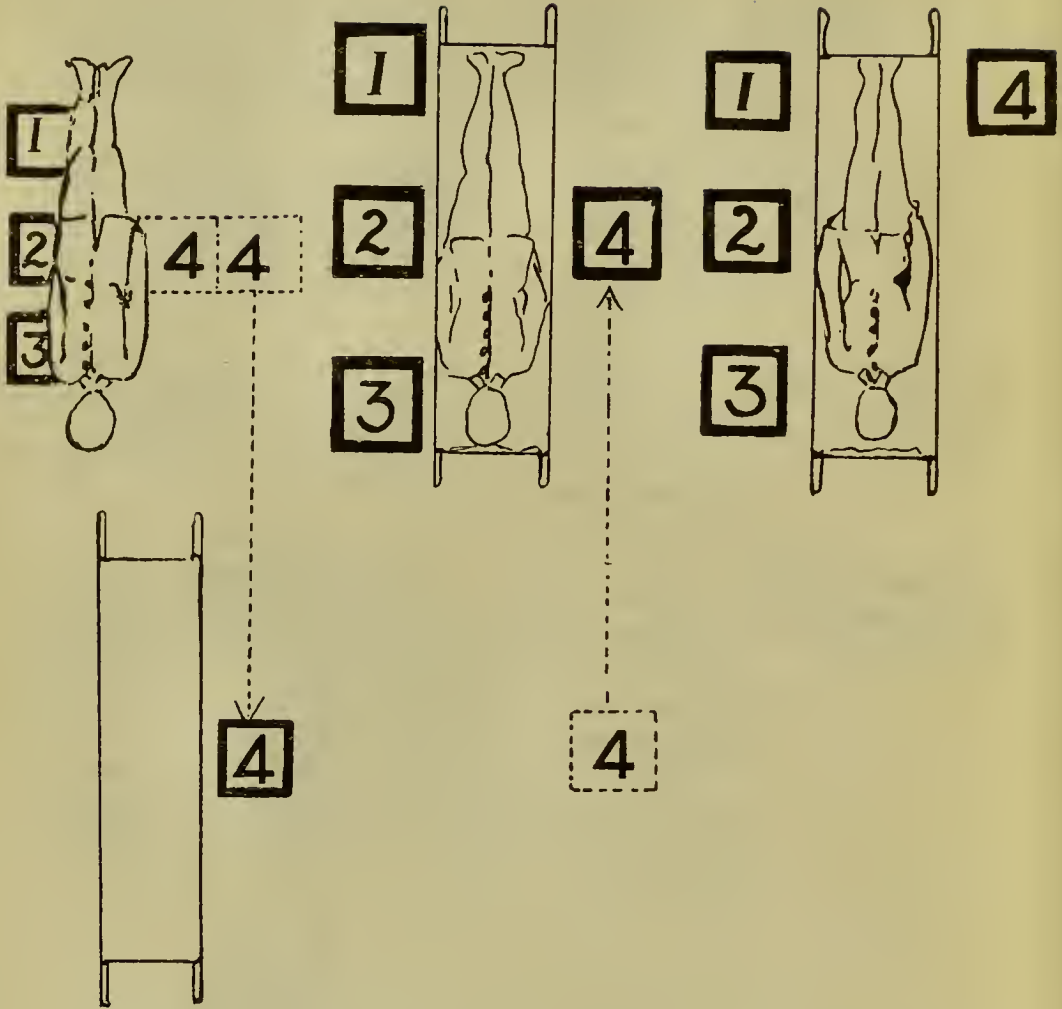
Notes.—Men provided with ground-sheets, to act as patients, will be placed in front of the squads, extended to four paces, and directed to lie down with their heads towards the squads.

When the bearers have sufficiently advanced in these exercises, the Nos. 4 will take charge of their respective squads.

(1). *Loading.*
COLLECT—
WOUNDED.*

Each squad doubles by the shortest route to the corresponding patient, and halts without further word of command when one pace from the head of and in line with the patient.

PLATE X. (Cont.)



(Fig. 3).

Patient on Knees of
No. 1, 2, and 3
Bearers.

The bearer on right of
patient who is nearest to
the stretcher supplies
the stretcher and places
it on the ground beneath
the patient.

(Fig. 4.)

Lowering patient on
to Stretcher.

The bearer on the right
of patient steps forward
one pace to assist in
lowering the patient on
to the stretcher.

(Fig. 5.)

Patient on Stretcher.

Patient on stretcher
and bearers ready to
move off.

The No. 4 will proceed to the patient, examine and attend to his injury, and, if his carriage on the stretcher be necessary, he will give the following words of command.

**Note.*—The command *Collect Wounded* may be given when the squads are STANDING EASY, in which case they will come to ATTENTION, lift stretchers, and double out as above described.

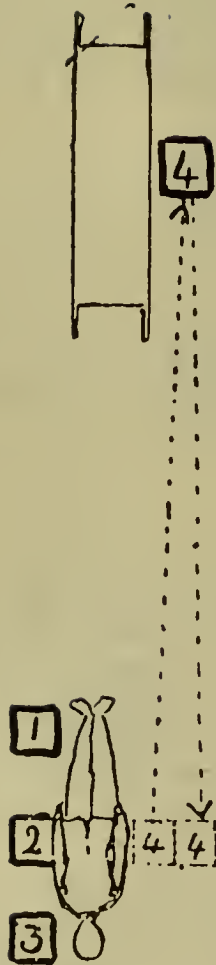
LOWER—
STRETCHER.
PREPARE—
STRETCHER.

While the stretcher is being prepared by Nos. 1 and 3, the disengaged bearers will proceed to the patient to render such assistance as may be required, No. 2 going to the left.

LOAD—
STRETCHER.

When the patient is ready for removal on the stretcher, No. 4 will give the command *Load—Stretcher*, when the bearers, unless otherwise directed by No. 4, will place themselves as follows:—Nos, 1, 2, and 3 on

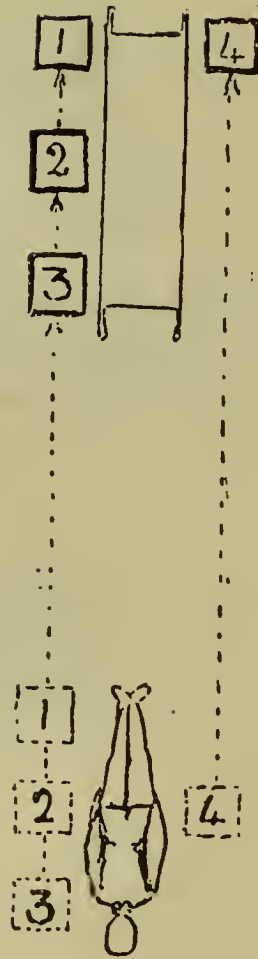
PLATE XI.



(Fig. 1.)

Unloading.

No. 4 carrying the stretcher three paces clear of the patient's feet and returning.



(Fig. 2.)

Unloading.

Patient lowered to the ground and bearers taking up position at the stretcher as in prepared stretchers.

the left of the patient, No. 4 the right. No. 1 at the knees, No. 2 at the hips, No. 3 at the shoulders, No. 4 opposite No. 2.

The whole, turning inwards together and kneeling on the left knee, will pass their hands beneath the patient ; No. 1 supports the legs, Nos. 2 and 4 the thighs and hips, No. 3 the upper part of the trunk.

Note.—In lifting the patient off the ground, special care must be taken of the injured part, No. 4 giving the necessary instructions. In the case of a severe injury No. 4 will himself attend to the injured part in lifting, directing another bearer to replace him if necessary.

LIFT.

The patient will be carefully lifted on to the knees of Nos 1, 2 and 3.

No. 4 will then disengage, rise, turn to his left, double to the stretcher, take hold of it, left hand across, resting the near pole on the

left hip, return to the patient and place the stretcher directly beneath him ; then stand up and return to his former position. Kneel on the left knee, and assist in lowering the patient. (*See Fig, 3, Plate X*).

LOWER.

The patient is lowered slowly and gently on to the centre of the canvas, special care being taken of the injured part.

The bearers then disengage, rise, Nos. 1, 2 and 3 turn to the left, No. 4 to the right, and stand to stretchers as in "prepared stretchers."

Note.—Men under instruction should be exercised in carrying the loaded stretcher over various obstacles, and taught the methods most suitable for the safe carriage of the patients. When squads are acting independently they should be instructed to move at as wide an interval as possible the disengaged

bearers taking care not to become detached from the squad.

(2). *Unloading.*

When the stretcher is to be unloaded, the No. 4 will give the following words of command :—

UNLOAD—
STRETCHER.

The bearers will place themselves as described for loading.

LIFT.

The patient is lifted as described for loading.

No. 4 grasps the stretcher as described for loading, and, lifting it clear of the patient, carries it forward 3 paces clear of the patient's feet. He then rejoins his squad and with the other bearers steps forward and assists in lowering the patient to the ground.

LOWER.

The patient is gently lowered to the ground ; the bearers disengage, rise, and turn towards the stretcher, the whole step off to their places at the stretcher as in prepared stretchers.

LOADING AND UNLOADING STRETCHERS WITH REDUCED NUMBERS.

77. With Three Bearers.—In the event of there being only three bearers available, the stretcher will be placed at the patient's head, in the same line as his body. The bearers will then lift the patient, rise to the erect position, carry him head-foremost over the foot of the stretcher, the horizontal position of his body being maintained throughout the movement, and lay him in a suitable position on the canvas. When unloading, the patient will be lifted and carried head-foremost over the head of the stretcher. To lift the patient, one bearer, placing himself on the injured side in a line with the patient's knees, raises and supports the lower limbs, while the other two, kneeling on opposite sides of the patient, near his hips, facing each other, each pass an arm under his back and thighs, lock their fingers so as to secure a firm grip and raise and support the trunk.

78. With Two Bearers.—When only two bearers are available, the stretcher will similarly be placed at the patient's head, and in the same line as his body. The bearers will then lift the patient, rise to an erect position, carry him, in loading, head-foremost over the foot of the stretcher, and, in unloading, head-foremost over the head-end.

The method of lifting will vary according to whether the lower limbs are severely injured or not:—

- (a) With a severe injury of one of the lower limbs, both bearers place themselves on the injured side; the one in a line with the patient's

knees must raise and support the lower limbs, the one near the patient's hips, the body, assisted by the patient himself as far as possible, the horizontal position of the patient's body being maintained throughout the movement.

- (b) With the lower limbs intact or only slightly injured, the patient may be lifted by the improvised seat described in the next chapter, provided there are no symptoms of shock present; in the latter case, method (a) must be resorted to.

EXERCISES FOR STRETCHER, MARK I, SPECIAL.

79. **With Six Bearers.**—When supplying stretchers, care should be taken that the stretchers are placed on the ground with the hooded or head-ends of the stretchers towards the Nos. 3.

(i.) *Loading.*—The patient having been placed on the stretcher, Nos. 2 and 5 raise the hood, adjust the front pair of lines, passing them through the leather loops fixed on the stretcher, and fastening off. Nos. 3 and 6 at the same time pass the rear lines through the eyes in the rear of the canvas and secure them. Bearers then rise together, Nos. 1, 2, and 3 turn to the left, Nos. 4, 5, and 6 turn to the right.

(ii.) *Lifting.*—On the command *Lift—Stretchers*, the Nos. 1 and 3 lift the stretcher as before described. As soon as this is carried out, Nos. 4 and 5 step back and place themselves by the side-handles on the right of

the stretcher. Nos. 2 step up and place themselves by the side-handles on the left, in line with Nos. 4. The Nos. 6, turning outwards and passing round by the head of the stretcher, place themselves on the left of the stretcher in line with Nos. 5.

(iii.) *Advancing*.—On the command *Advance*, the whole move off. Nos. 1, 2, and 6 with the left foot, Nos. 3, 4, and 5 with the right; Nos. 2, 4, 5, and 6, laying hold of the side-handles, will assist in carrying the stretcher.

(iv.) *Lowering*.—On the command *Lower—Stretchers* the stretcher will be lowered to the ground, and the bearers will place themselves at the stretcher as for unloading (Nos. 1, 2, and 3 on the left, Nos. 4, 5, and 6 on the right).

(v.) *Unloading*.—On the command *Unload*, Nos. 2 and 5 unfasten the front lines, Nos. 3 and 6 the rear lines, and lower the hood. As soon as this is done the patient is lifted as before.

(vi.) *Loading wagons*.—Previous to the stretchers being placed in the wagons, the side-handles will be pushed under the stretcher.

CHAPTER V.

AMBULANCE WAGON EXERCISES.

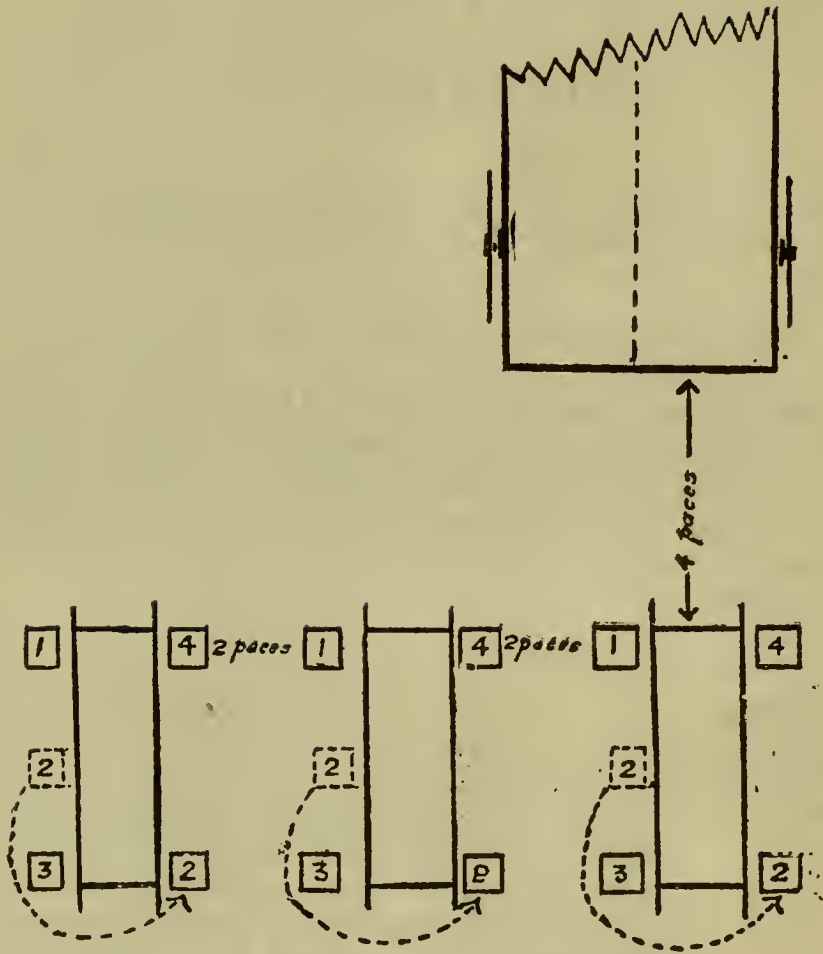
80. For instructional purposes the squads will be numbered by fours.

The ambulance wagons will be drawn up in single rank on the drill ground. A corporal or private will be told off as wagon orderly to each wagon. They will lower the seats and rails of the upper compartments and prepare the wagons for the reception of the wounded.

81. Loading Wagons. ON WAGONS— RETIRE.

The stretcher squads retire towards the line of wagons ; the four squads on the left, as the line is retiring, proceeding to the wagon on the extreme left, the next four squads to the next wagon and so on to the right of the line, closing in to two paces interval between the squads, and halting without further word of command when four paces from the tail-board of the wagon.

PLATE XII. (Fig. 1.)



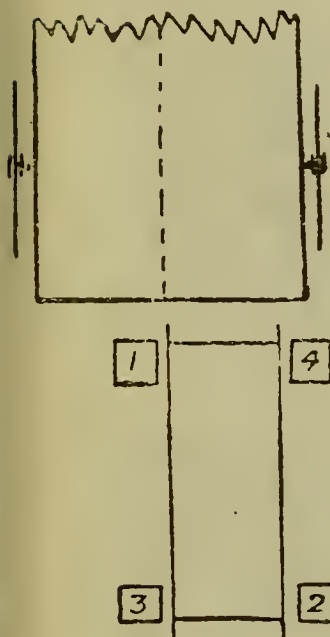
"On Wagons—Retire."

Three squads of four, five, and six bearers in position ready for loading wagon.

LOWER—
STRETCHERS.

FIX—SLINGS.

PLATE XII.



(Fig. 2).

“ Load Wagons.”

Squads advanced towards
the wagons to load.

As before detailed.

Slings will be fixed as follows :—Nos. 1 and 3 turn to the right, kneel on the left knee, pass the loop of the grip-plate end over the near handle, grip-plate downwards, carry the sling under and round the opposite handle close up to the canvas, back to the near handle, round which two or three turns are made, pass the transverse strap round the pole between the runners and transverse, and fasten the buckle outside the sling between the poles ; the bearers then rise and stand to stretchers.

When this is being done, the bearers will take up positions as follows;—Nos. 1 and 3 on the left, 2 and 4 on the right of the stretcher, No. 2 placing himself opposite No. 3. (*See Fig. 1, Plate XII.*)

Note.—When the bearers have learned to fix slings, the order *Lower Stretchers and fix Slings* will be given as one order by No. 4, and carried out accordingly.

STAND—EASY.

As in Sec. 7.

SQUADS, IN SUC-
CESSION FROM
THE RIGHT,—
LOAD.

Note—The upper
compartments
will be loaded
first, commencing
with the off-side.

When the squads are sufficiently advanced in these exercises, the Nos. 4 will take charge of their respective squads and give the following words of command:—

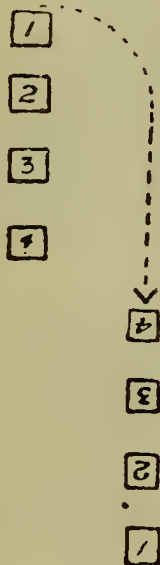
No.—
SQUAD, AT-
TENTION.
LOAD—
WAGONS.

The Nos. 1, 2, 3 and 4 bearers turn inwards, stoop, grasp the poles of the stretcher, hands wide apart, palms uppermost; then, working together, they rise slowly lifting the stretcher, holding it level at the full extent of the arms.

ADVANCE.

On the command *Advance*, they advance towards the wagon with a side-step crossing their feet in front, the first step being taken with the foot nearest the wagon; they halt one pace from the tail-board of the wagon, and, lifting the stretcher on a level with the floor of the upper compartment, place the front runners on it, Nos. 2 and 3 slightly raising the head of the stretcher.

PLATE XII.



FALL—IN.

RE-FORM
SQUAD,
QUICK—
MARCH.HALT,
STAND—
EASY.

(Fig. 3.)

Reforming Squad.
Facing the field.

The stretcher is then gently pushed into its place, Nos. 1 and 4 making way for the stretcher to pass between them.

When loading the upper compartment the stretcher is gently pushed into the wagon until the handles at the head-end are in line with the tail-board ; Nos. 1 and 3 then enter the wagon, No. 1 going to the foot, No. 3 to the head-end of the stretcher, and gently push it into its place and secure it there by means of the strap.

As soon as the stretcher is in its place, the No. 4 will give the command *Fall—in*, when the bearers will fall in, as in file, facing the wagon.

The bearers will wheel round to the right and re-form squad, as in file, facing the field, four paces behind and to the right of the remaining squads. (See Plate XII, 3).

As in Sec. 7.

Notes.—When loading the upper compartment, it may be necessary for the No. 1 to enter the wagon as soon as disengaged, and guide the front runners over the rubber blocks which retain the stretcher in position in the wagon. As soon as the off upper compartment is loaded, the next squad will be ordered to load the near upper compartment. As soon as this is completed the lower compartments will be loaded in the same way. When loading the lower compartment it will not be necessary for Nos. 1 and 3 to enter the wagon.

When the wagon is fully loaded the upper seats will be securely strapped to the side of the wagon by the wagon orderly, and the tail-board lifted and secured in its place.

82. Unloading Wagons.

Notes.—The requisite number of squads will be drawn up ten paces from and facing the tail-boards of the wagons.

The squads will be numbered by fours.

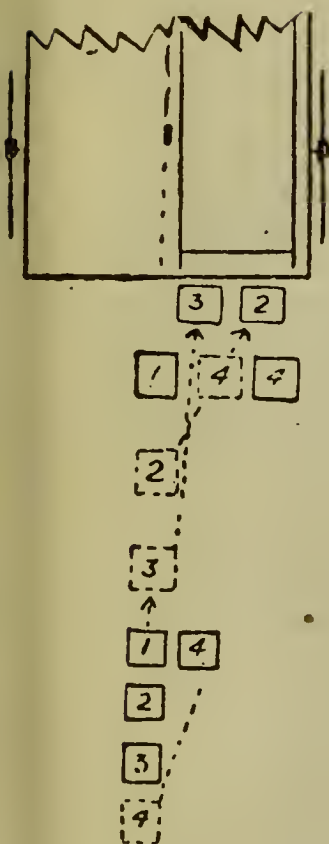
SQUADS,
STAND—EASY.

As in Sec. 7.

The wagon orderlies will prepare the wagons as for loading. The lower compartments will be unloaded first, commencing with the off compartment.

SQUADS, IN
SUCCESSION
FROM THE
RIGHT,—
UNLOAD.

PLATE XIII.



Unloading Wagons.
squads taking posts and
unloading.

When the squads are sufficiently advanced in these exercises, Nos. 4 will take charge of their respective squads and give the following words of command :—

No.—
SQUAD, AT-
TEN—TION.
FOR UN-
LOADING,
TAKE—
POST.

The squad moves off to-
wards the wagon, halting
without further word of
command, one pace from
the tail-board of the wagon.
(See Plate XIII.)

UNLOAD—
WAGONS.

No. 1 on the left, Nos. 2,
3 and 4 on his right ; Nos.
2 and 3 (No. 2 going
to the right), lay hold of
the handles, and raising the
head of the stretcher about
6 inches, gently withdraw
it. As the stretcher is with-
drawn, Nos. 1 and 4 take
hold of the handles at the
foot-end and, taking the
weight, lower it to the full
extent of the arms ; great
care being taken to keep the
stretcher level and to avoid
jarring the patient as the
stretcher leaves the com-
partment.

RETIRE.

The squads will retire and place the stretcher on the ground selected for the purpose ; then stand to stretchers, being joined by Nos. 5 and 6.

STAND—
EASY.

As in Sec. 7.

Note.—In unloading the upper compartment, Nos. 1 and 3 enter the wagon as in LOADING, withdraw the stretcher until the handles at the head-end are in line with the tail-board of the wagon, then rejoin their squad : the stretcher is withdrawn as in previous detail.

PLATE XIV.



(Fig. 1.)—The “ Hook-grip,” Seat.



(Fig. 2.)—Method of forming “ Hook-Grip.”

HAND-SEAT EXERCISE.

THE "HOOK-GRIP" SEAT.

83. The bearers will be formed up in double rank and numbered:—

Odd Numbers: Right Files.

Even Numbers: Left Files.

FORM TWO-
HANDED—SEATS.

TWO.

FILES, RIGHT
AND LEFT—
TURN.

The right files turn to the left, the left files to the right.

The right files bend the fingers of the right hand at the second joint, back of the hand upper-most. The left files bend the fingers of the left hand at the second joint, back of the hand downwards. The right and left files hook the hands together, each placing the disengaged hand upon the other's hip. (See Plate XIV. Figs. 1 and 2.)

The files resume the position of ATTENTION, and turn in the original direction.

EXERCISES WITH RAILWAY WAGONS.

84. No special instructions are necessary for loading and unloading injured men who are able to walk and assume the sitting posture; recumbent patients alone are alluded to in the text.

85. Loading.

Note.—The bearers with lowered loaded stretchers and fixed slings will be drawn up in extended order 10 paces from and facing the wagon.

SQUADS IN
SUCCESSION
FROM THE
RIGHT—LOAD.

Each No. 4 in succession from the right assumes charge of his squad and gives the following words of command.

No.—
SQUAD,
LOAD—
WAGONS.

As in Ambulance Wagon Exercises.

ADVANCE.

The squads advance by the nearest way to the wagon, wheeling when opposite to, and one pace from, the doorway, and the stretcher is carried into the wagon head - first. The stretcher is carried to the far right - hand corner, where it is raised, and the handles of the poles are placed in the upper loops of the ropes.

FALL-IN.

The bearers fall in outside the wagon, as in file, facing the wagon, one pace from the doorway.

ABOUTTURN
REJOIN
SQUADS,
QUICK—
MARCH.
HALT.
ABOUT—
TURN.
STAND AT—
EASE.

As before described.

86. Similar words of command are given by the Nos. 4 of the successive squads when they see the squad on their right falling in outside the wagon. No. 2 squad loads the upper, near, right-hand corner; No. 3 the lower, near, right-hand corner. The lashings are fixed by No. 4 squad as follows:—The lashing attached to the ring in the floor of the wagon immediately beneath the handles of the stretcher is carried up round the handle, back through the ring, and fastened off. The lashing attached to the ring lying between the handles is passed up round the left handle, back through the ring, round the right handle, and back to the ring, thus forming a V, where it is fastened. The upper tier is steadied by a lashing starting from a ring-bolt in the side of the wagon which is carried across and secured to the opposite side, a firm hitch being taken round each handle. The lashings must be drawn tight to prevent the swaying of the stretchers. The left half of the wagon is loaded in a similar manner.

87. Unloading
 SQUADS IN
 SUCCESSION
 FROM THE LEFT,
 —UNLOAD.

The Nos. 4 will take charge of their respective squads, and give the following words of command :—

No.—SQUAD
 ATTEN—
 TION.
 FOR UN-
 LOADING,
 TAKE—
 POST.

UNLOAD—
 WAGONS.

As in Ambulance Wagon Exercises, but halting one pace from the doorway.

The bearers on the right take a side-pace of 30 inches to the right, Nos. 2 and 3 then enter the wagon and proceed to the head of the stretcher, Nos. 1 and 4 to the foot, lift and remove it from the loops, and carry it clear of the wagon. As it is brought through the doorway, the remaining bearers take up their positions at the stretcher, and the whole, working together, retire and place the stretcher gently on the ground selected for this purpose. The bearers then rise and take up their positions as in “prepared stretchers.”

CHAPTER VI.

LITTERS.

88. A Litter “Ashford” or “Rea-Edwards” pattern consists of three parts ; 1, The Undercarriage; 2. The Stretcher ; 3, The Hood and Apron or awning cover, according to which is used.

INSTRUCTIONS FOR USING THE “ASHFORD” LITTER.

Loading.—The two bearers carrying the stretcher on which the hood and apron or awning cover has been placed, approach the end of the undercarriage nearest to them, and the bearer at the foot of the stretcher passes between the sides stepping over the cranked axle. The bearer at the head, seeing the rollers of the stretcher are immediately over the slots in the sides of the undercarriage, will give the command “halt,” followed by “lower,” when the stretcher will be lowered on to the undercarriage, the four rollers being placed in the four slots.

Propelling.—Before attempting to propel the litter, the four legs must be raised. Grasp in turn each leg, including the lever which must be pressed against the leg to release the lock, and raise the leg to the full extent, at the same time releasing the lever to secure the leg in the raised position. When the legs at the foot have been raised, those at the head will be similarly dealt with, the bearer retaining his hold of the legs as shown in Plate XVII. When raising the

legs at the head end it will be necessary to raise them slightly off the ground. This is quite safe if the handle of the stretcher opposite to the leg being raised is grasped by the disengaged hand. One hand only is required for raising each leg. Always commence at the foot, for if the patient has been properly placed upon the stretcher the greater weight of his body will be at the head, and the litter will be resting on the two legs at that end. If only one bearer is available, he may, after being sure that his stretcher has been properly loaded, safely raise the two legs at the foot end, but if two bearers are available, one should stand at the head of the litter whilst the legs at the foot are being raised. If a telescopic handled stretcher is used, the handles at the foot should be pushed in before raising the legs of the litter, but should be left out at the head, as it allows the bearer propelling to take a better grasp (see Plate XVII.)

Unloading.—The litter is “secured” by lowering the legs (Plate XV.) The same actions are used, except that in this case the legs at the head end must be lowered first; if two bearers are present one will remain at the head until the footlegs are lowered. The bearers then take their places at the head and foot of the stretcher respectively (the latter drawing out the handles at his end, if a telescopic handled stretcher is used), grasp the handles and lift the stretcher clear of the under-carriage, they then move forward, the bearer at the head of the stretcher taking care to step over the cranked axle.

The hood and apron should be removed from the stretcher when the patient is placed upon or taken off it.

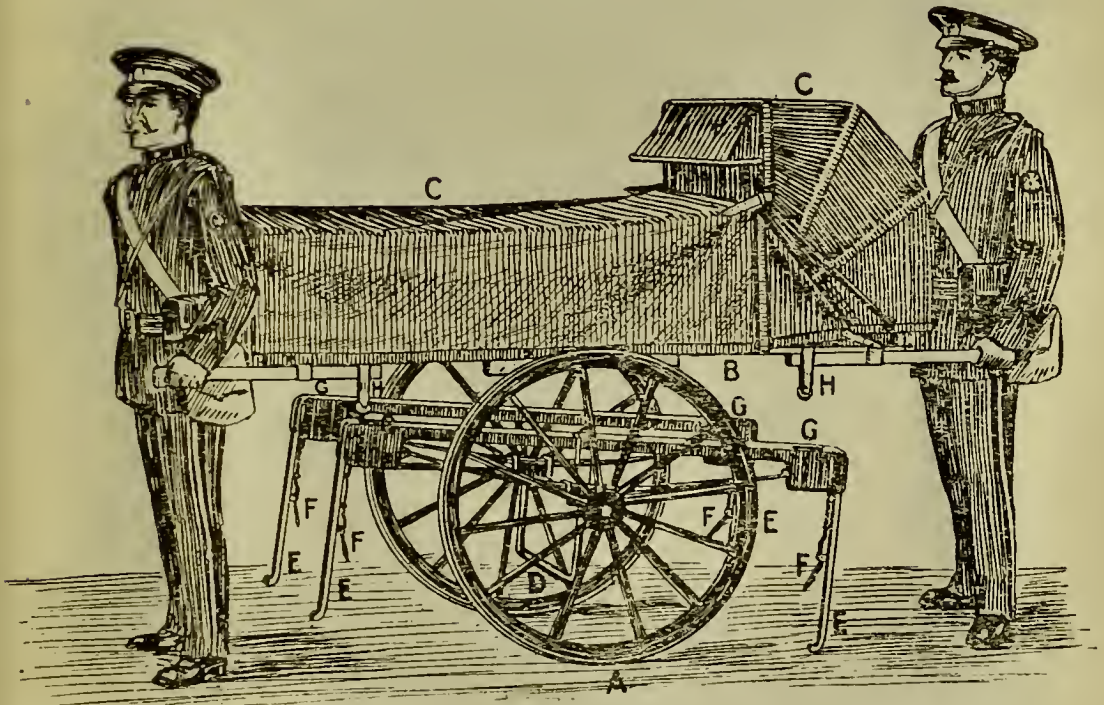
INSTRUCTIONS FOR USING THE "REA-EDWARDS" LITTER.

Loading.—The bearers carrying the stretcher take position beside the under-carriage, the bearer at the head of the stretcher being at the head of the under-carriage. They raise the stretcher clear of the near wheel, carry it over and place it upon the under-carriage, taking care that the four rollers are in the four slots. If a telescopic handled stretcher is used, push in the handles. The bearer at the head now takes hold of the rod carrying the push bar, grasping at the same time the lever which releases the lock and allows the push bar to be raised (there are two elevated positions). Whilst raising the push bar, one handle of the stretcher at the head should be grasped by the left hand in order to support it. When the litter is propelled with the stretcher level (see Plate XVIII) the weight is balanced over the axle, which makes this type of litter very easy of propulsion. To "secure" the litter (Plate XVI.) grasp one pole of the stretcher with the left hand and with the other unlock the push bar by pressing the lever and lower it to the full extent, at the same time releasing the lever.

In loading or unloading the Rea-Edwards Litter the bearers can either face each other or they can both face in the same direction.

PLATE XV.

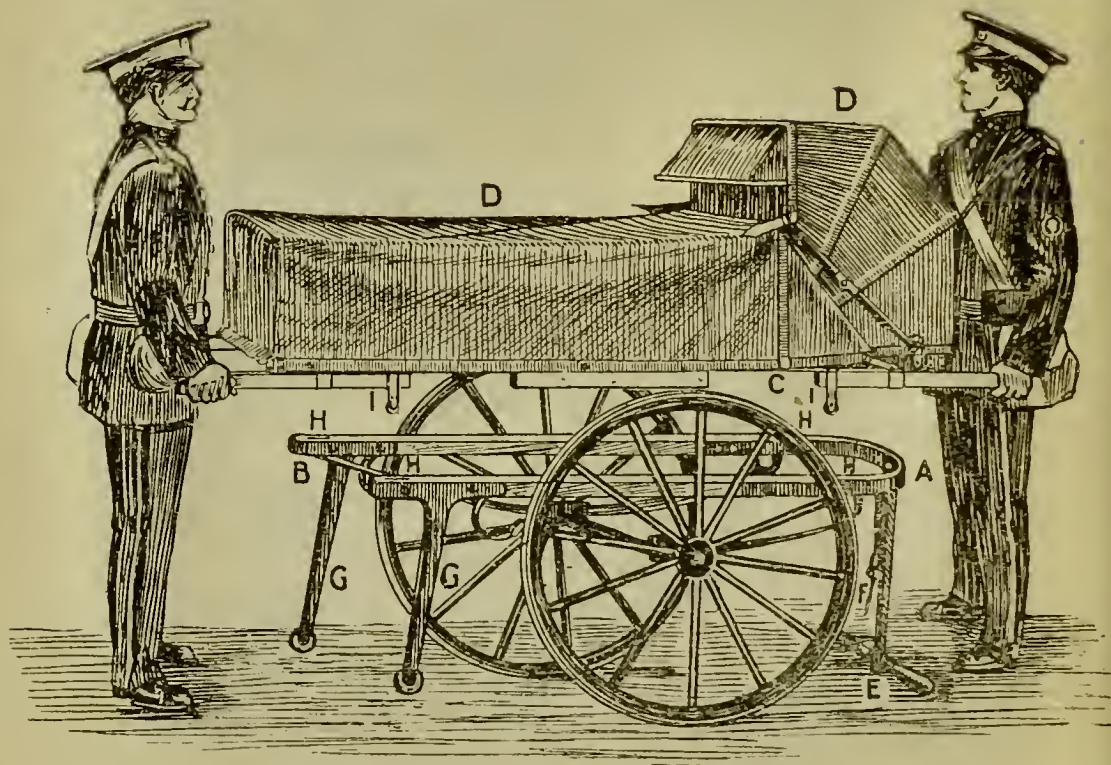
"ASHFORD" LITTER "SECURED" FOR LOADING AND UNLOADING.



- A. Under-carriage.
- B. Stretcher (either telescopic handled or ordinary pattern can be used).
- C. Hood and Apron.
- D. Cranked axle.
- E, E, E, E. Legs.
- F, F, F, F. Levers for unlocking legs when raised or lowered.
- G, G, G, G. Slots for stretcher rollers.
- H, H. Stretcher rollers.

PLATE XVI.

"REA-EDWARDS" LITTER "SECURED" FOR LOADING AND UNLOADING.



- A. Under-carriage, head.
- B. „ „ foot.
- C. Stretcher (either a telescopic handled or ordinary pattern can be used)
- D, D. Hood and Apron.
- E. Push bar.
- F. Lever for unlocking push bar when raised or lowered.
- G, G. Fixed legs fitted with rollers.
- H, H, H, H. Slots for stretcher rollers.
- I, I. Stretcher rollers.

PLATE XVII.

"ASHFORD" LITTER READY FOR PROPELLING.

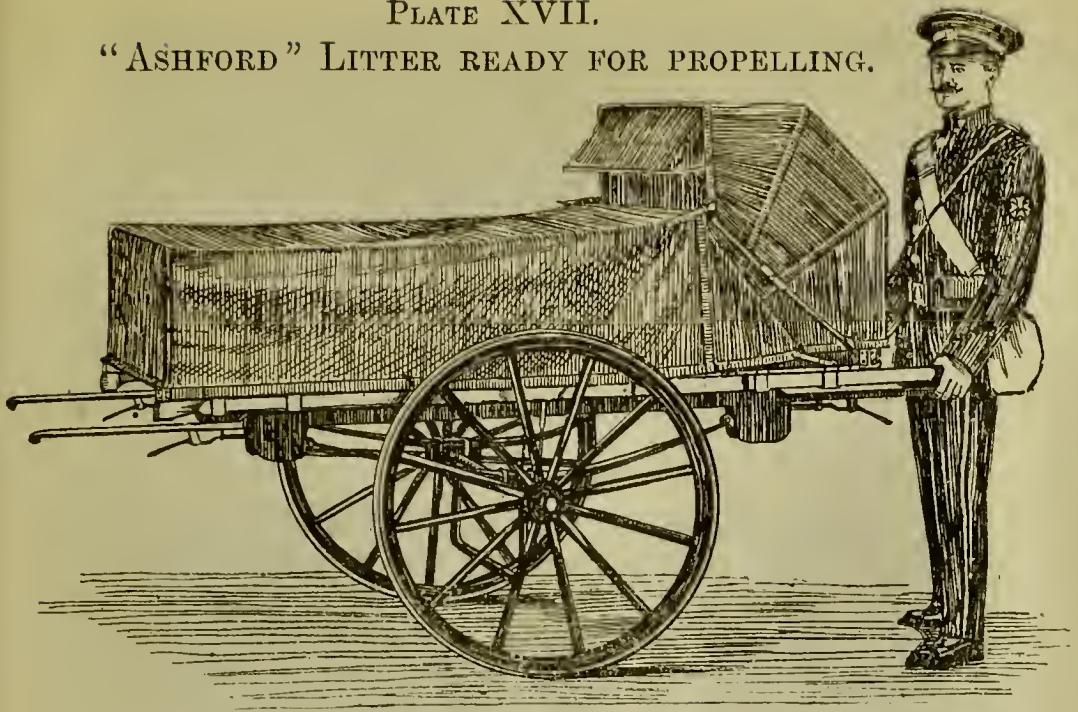
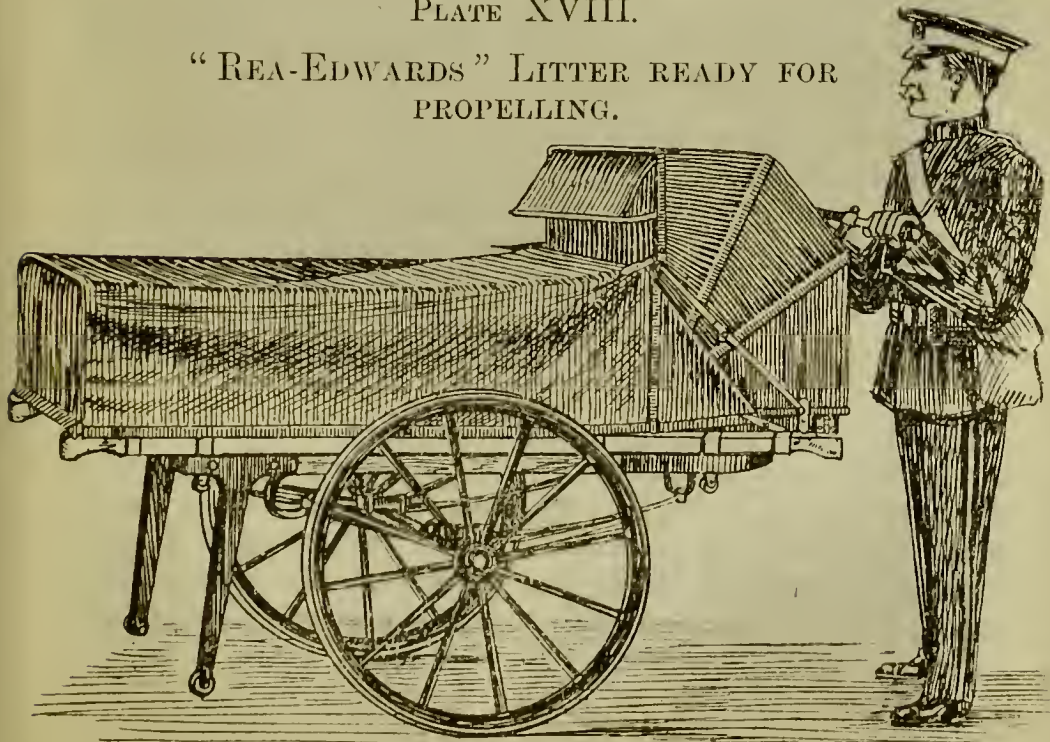


PLATE XVIII.

"REA-EDWARDS" LITTER READY FOR PROPELLING.



PART II.
CAMPING.

CHAPTER VII.

TENT PITCHING EXERCISES.

BELL TENT.

89. Description.—In field medical units the single-circular or bell tent is used for the accommodation of the sick. This tent weighs 83 lb. It is fitted with 3 ventilators, 20 tying-up lines, and from 22 to 24 ropes or bracing lines according to the particular pattern of tent, *e.g.*, Mark II., 22 bracing lines, Mark III., 23 bracing lines, Mark IV. and Mark V. 24 bracing lines. A valise and a pin-bag containing 47 pins and 2 mallets with handles are supplied with each tent.

90. Pitching a Bell Tent by Two Men.—No. 1 is told off as pole-man ; No. 2 as tent-man. No. 1 falls in with the pole in his left hand, and mallet and five pegs in his right ; No. 2 covers him, carrying tent and pin-bag. When No. 1 is moved to the position his tent is to occupy, No. 2 will follow with the tent, and fall in five paces in rear of him. No. 1 having put the pole together takes up his dressing.

No. 2 drives a peg upright between the feet of No. 1 at the foot and in front of the pole ; he then shakes the tent out of its valise, and spreads it on the ground with the door uppermost. No. 1, when the peg is driven, lays the pole on the ground. He then takes three and a half paces from the centre peg to his

front, *i.e.*, the way the door is to face, and drives in the front peg. He then turns about, goes to the centre peg, takes three and a half paces to the rear from it, drives in another (the rear peg), returning to the centre, and following a like course to the right and left.

Both men now proceed to the tent; one to the right, the other to the left of the door. Each takes the second rope on either side, commencing to count from the lower corner rope of the door-flaps, and draws the tent on to the ground it is to occupy. Both these ropes are then attached to the front peg. The men then count the ropes until they come to the seventh (sixth in Mark II. pattern), and attach them to the right and left pegs. No. 2 counts five more ropes on either side and fastens them (one rope only in Mark III. pattern) to the rear peg at full length. No. 1, in the meantime, takes up the pole and fits the smaller end of it into the cap of the tent (in the case of a double-circular tent passing it through the hole in the inner lining), keeping the bottom of the pole to the front. No. 2 assists in fitting the pole into the top of the tent. No. 1 gets inside the tent, and No. 2 then hooks the fly of the tent over the pole and under the ropes. No. 1 then raises the pole about 3 feet from the ground, keeping the bottom of it on the ground.

On the command being given to raise the tent, No. 1 works the bottom of the pole inwards until it comes against and immediately behind the centre peg, lifting the upper end of the pole at the same time. No. 2, when the tent is raised, tightens the ropes already fixed to the four pegs. No. 1 continues to support the pole upright until this is done.

When the tent is secure, No. 1 comes out and assists No. 2 in driving pegs and fastening ropes in the following manner:—The two second ropes, which were first fixed to the front peg, are now separated. The runner of each rope is slid half-way up. The loop thus formed is drawn out in a line with the seam of the tent. It is then brought down to the ground, and at the spot where it touches the ground a peg is driven. This is continued until all the ropes have been made fast.

The curtain of the tent should now be pegged down. The door of the tent should be opened, the ropes attached to its lower corners being fastened to the second peg on the right and left of the doorway.

The mallets, spare pegs, and pin-bag are put into the valise which is placed inside the right-hand side of the door of the tent.

When the tent is correctly pitched the pegs should form a perfect circle.

91. Trenching a Bell Tent.—If it is necessary to trench a tent, it is done in the following manner:—Before the curtain of the tent is pegged down, a cut is made with a spade all round where the edge of the curtain touches the ground. This cut is made about 6 inches deep with the spade held upright. A second cut is made leading into it about 6 inches from it all round. The turf so cut out is laid with the grass downwards round the outer edge of the trench. The curtain is then pegged down into the inner side of the trench.

92. Precautions in wet weather.—When rain comes on, the ropes, as they become wet, get tight

and, if not attended to, will pull the pegs out of the ground or break the poles. They will also get tight with a heavy dew. Thus it will be necessary to slacken them when rain is expected, and also at night if the dew is heavy. Again, if the ropes have become wet, they will slacken as they dry, and will require to be braced up, otherwise the tent may flap and draw the peg.

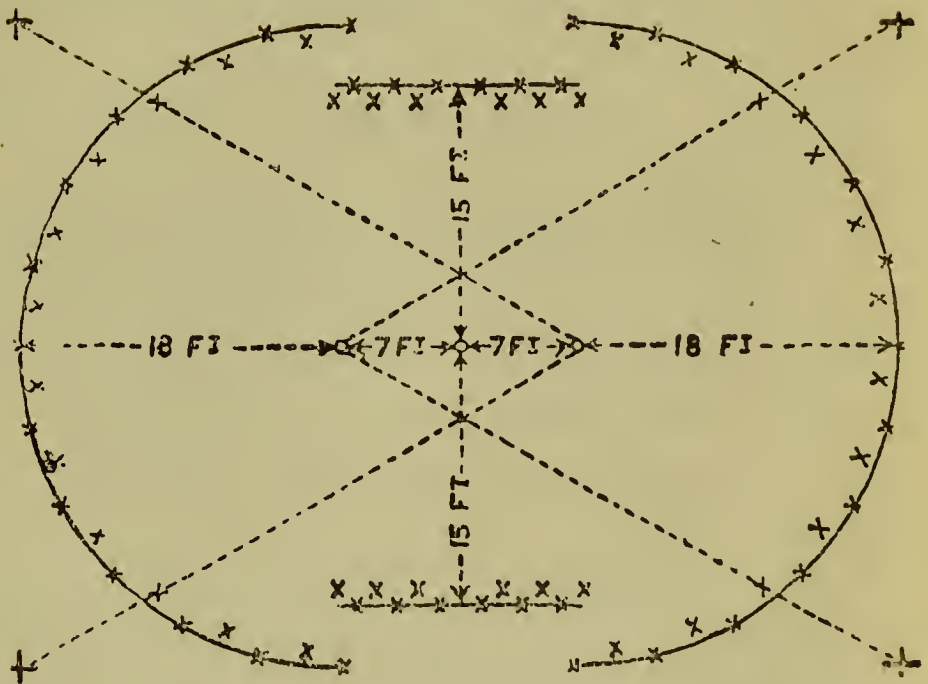
Note.—The foregoing instruction applies to all canvas tents.

93. Striking a Bell Tent.—To strike a tent, both men will take off and coil down all the ropes except those attached to the two front, right, left and rear pegs. The fly is unhooked; No. 1 goes inside and takes hold of the pole; No. 2, in the meantime, draws out all the pegs to which the ropes are not fixed.

Note.—The pegs holding the curtain will have been drawn out already.

On the command to strike being given, No. 1 runs out of the door of the tent with the pole. The five remaining ropes are now cast off and coiled down. No. 2 now takes hold of the point of the tent and draws it to the rear, door upwards. Keeping the door upwards, in the centre, the tent is spread out flat on its side. No. 1 places his foot on the point of the tent; No. 2, taking the edges, folds them over so that they meet at the door. This is again done, and then the right half of the tent is folded over the left. No. 1 now takes the point and brings it half-way down the tent. Nos. 1 and 2 then roll the tent as tightly as possible,

PLATE XIX.



Ground Plan of the pegs of the Marquee.

Showing direction of weather-lines.

from the smaller to the larger end, and put it into its valise.

Mallets are taken apart, and their heads put into the peg-bag with the pegs. Their handles are put into the tent-valise. The pin-bag is then put into the valise on top of the tent, and the valise laced up. No. 1 takes the pole to pieces and holds it in his left hand. No. 2 falls in in rear of him with the valise.

HOSPITAL MARQUEE.

94. Description. — A hospital marquee, inside dimensions 29 feet long and 14 feet wide, weighing 512 lb. complete, consists of :—One inside linen roof, 1 outside ditto, 8 walls (4 inside and 4 outside), 82 bracing-lines (40 inside and 42 outside), with wooden runner and button to each, 2 wooden vases painted red, and 2 weather-lines (90 feet each) with large runners, all packed in a canvas valise, laced up in the centre, and marked on the outside "Hospital Marquee"; 180 small tent-pegs, 4 large ditto (for weather-lines), and 2 mallets, all contained in one peg-bag, marked on the outside with contents and marquee to which it belongs; 1 set of poles, consisting of 8 pieces, viz., 1 ridge in two pieces, and 3 standards or uprights in two pieces, and lashed together in one bundle by two box-cords; 1 waterproof bottom, made of painted canvas, in four pieces, each piece measuring 15 feet by 8 feet, rolled in a bundle round a thin pole, and tied by three box-cords.

95. Pitching a Marquee.—Undo and empty the peg-bag (keeping the four large pegs for the weather-lines by themselves), fit the handles in the mallets, and fix

the two pieces of the ridge-pole together. This done, proceed to lay out the ground for pitching the marquee as follows :—Lay the ridge-pole on the ground selected, and drive in a peg at its centre and at each of its two end holes. These pegs will mark the positions of the standard or upright poles, and will be 7 feet apart. With each end peg as a centre, in a semi-circle with a radius of 6 yards, lay thirteen pegs with their points inwards where they are to be driven. This will be easiest done as follows :—Step 6 yards from one of the end pegs, and, in a straight line with the three standard pegs, lay the centre peg of a semi-circle ; next step 6 yards to each side of the end peg, and, on a line at right angles to the three standard pegs, lay a peg for each end of the semi-circle ; then lay at each side, between the centre peg of the semi-circle and its two end pegs, equal distances apart, five pegs, and the semi-circle of thirteen pegs is complete. The other end will be done in the same way.

For the sides of the marquee, on a straight line parallel to the three standard pegs, and 5 yards distant, lay six pegs, the first and the last of which will be 18 inches distant from the lines formed by each end standard peg and the two end pegs of each semi-circle. Now the pegs for the outer roof are all laid, and should be driven in before proceeding further.

For the inner roof, lay a peg between each two pegs of the outer roof, but on a line 1 foot further in. The space, however, between the third and fourth pegs on each of the straight lines of pegs is to be left blank for the doorway. These driven, the pegs are complete for the marquee, except the four weather-line pegs.

These are each driven at a corner where lines, drawn from each end and centre peg of the semi-circle, would meet to form a right angle.

The ground being laid out, carry the marquee within the line of pegs, unlace the valise, and arrange and spread out the marquee, the roofs one inside the other, in such a manner that the base and ridge will be parallel with the line of the standard pegs and the base will be touching them. Roll up the upper side of the outer roof as far as the ridge, so as to expose the web slings of the inner roof, insert the ridge-pole, and roll up the upper side of the inner roof in a similar manner.

Fix the two pieces of each standard pole together according to their numbers. This done, pass the standards through the openings in the inner roof; then pass their pins through the holes in the ridge-pole, through the eyelets in the two end web slings, and also through the eyelet holes in the ridge of the outer roof. Now fit the vases on the pins of the end standards, and pass the opening lines of the ventilators through the holes in the ridge of the inner roof by the side of the standards. Next pass the lines for opening and shutting the windows through the corresponding eyelets in the inner roof. Unroll the inner and outer roofs to their proper position, bring the ends of the standard poles so as to prop against the three standard pegs, and square the ridge-pole on the three standards thus placed.

To raise the marquee, one N.C.O. and ten men are required, viz., four weather-line men and six standard men. One weather-line man takes up a position at each large peg, holding in his right hand the runner

and in his left the line, with a loop ready at any moment to slip on the peg. Two standard men take up a position at each pole, one at the foot, the other at the top, facing each other. When the instructor sees all are ready, he gives the word to raise, when all, working together, steadily erect the standards, taking care not to raise one before the other. The N.C.O. now goes to the side and dresses the standard poles, tightening and slackening the weather-lines as required until the poles are perpendicular. He next goes to the end and dresses the poles in a similar manner in that direction.

The weather-line men should not leave their posts until the bracing-lines are on. Four of the standard men put on the bracing-lines, whilst two of them take mallets and drive in any loose pegs there may be. To put on the bracing-lines, two men go to each side of the marquee, commencing with the outer roof; one takes the line at one side of the window, and the other the line at the other side, which should be put respectively on the third and fourth pegs of the outer straight line, thus working towards the ends until meeting the men from the other side. In tightening the bracing-lines the marquee should be pulled towards the pegs so as to slacken the line, otherwise the pegs will be pulled out of the ground. The lines of the inner roof should be put on in a similar manner, beginning at each side of the window, and working round to the ends. When two lines are together, they should for the present go on the same pegs, but afterwards be shifted.

The curtains are in eight pieces, four for the inner wall and four for the outer wall. The outer curtain

should be so put on that the ground-flap is inside, and that it can be pegged on the outside. The inner curtain should be put on with the flap out, so that it can be pegged on the inside. Commence with the outer curtain at each side of the doorway and work round towards the ends, taking care to leave enough to overlap and close the doorway. When the curtains are on, they should be pegged down inside and outside.

The doorway of the marquee should be on the sheltered side. The curtains should be taken off the pegs and raised daily for ventilation. They can be fastened to the bracing-lines by the buttons of the peg loops.

96. Trenching a Marquee.—A trench, 9 inches broad and 4 to 6 inches deep, should be dug round the curtain, especially on the upper side if the ground be sloping. The trench should be cut well under the curtain, so as not to leave a ledge, otherwise the water will drip on the ledge and run under.

97. Striking a Marquee.—Unfasten the curtains at the bottom, and unhook them from the roof, beginning with the inner one. Fold each piece into eight parts. The four weather-line men now stand by the weather-lines while four men unfasten and do up into a skein the bracing lines, beginning with the inner roof at each side of the doorways and working round to the ends. The two mallet men take up the pegs as the lines are taken off them, and put them away in the peg-bag.

To lower the marquee, the men take up positions as in pitching, one to each weather-line and two to each pole. When all are ready, the N.C.O. gives the word

to lower. The weather-line men take the lines off the pegs but keeping a firm hold, the standard men having hold of the poles. All together they steadily lower the poles against the wind, the men at the feet of the poles keeping them from slipping, and the other men lowering them by walking backwards towards the ridge, in the same way as men lowering a ladder.

To repack the marquee, roll up the four weather-lines and take the vases off the pins, leaving them attached by the ventilating-cords. Spread out the roofs and roll up the upper flap, so as to expose the ridge-pole. Next pull away the standard poles, and remove the ridge-pole from the slings.

This done, unroll the upper fold of the roof. Bring over each end to the centre, across the middle of the window, and fold the square thus made from side to side into three equal parts. Place the eight pieces of curtain on the roofs lengthwise, overlapping in the centre, the flaps towards the thick end. Roll up the whole thus placed, evenly, commencing with the thick end, taking care not to have the roll too wide, or too narrow for the valise.

Spread out the valise, and pushing one of the side-flaps under the marquee, roll it in. Having arranged the flaps, lace them, commencing with the ends.

OPERATING TENTS.

98. Description.—The tent is rectangular in shape, and has a doorway at each end. It is fitted with six ventilators of the ordinary type, and also with a large ventilator on each side, to give extra light and air. The wall is permanently attached to the tent. The

poles used with it consist of two upright poles and one ridge-pole, each made in two pieces.

It is 20 feet in length, 14 feet in width, and 9 feet 4 inches in height, the wall being 3 feet high. The tent itself weighs 116 lb., or, with poles and appurtenances complete 181 lb.

The duck used in making this tent is of the same quality as for Mark V circular tents (S. 7359). For the main part of the tent the duck is 27 inches in width, and $10\frac{1}{4}$ oz. per yard in weight. For the wall, 36-inch duck is used, of about $13\frac{3}{4}$ oz. per yard in weight.

The valise and the pin-bag are the same as used for laboratory tent. The pins and the mallets are of the ordinary Service pattern. The complement is 2 mallets, 1 pin-bag, 60 small pins, and 8 large pins ; this allows 2 spare small pins.

Note.—On account of the rods in the large ventilators, this tent must be folded and rolled up lengthwise, and the weather-lines must not cross the ventilators when the tent is pitched.

99. Pitching an Operating Tent.—One N.C.O. and six men are required, two as pole-men, four as tent-men. The pole-men take the ridge-pole and uprights ; the tent-men the pegs and mallets (a maul is required to drive large pegs).

The tent-men unpack the tent and spread it flat on the ground, the lower edge about two paces from the ridge-pole, and the top to the windward.

The pole-men put the ridge-pole together, and lay it on the ground on the site of the tent, and a peg is driven in at each end of it. The pole-men stand back to back with these pegs between their feet.

Two tent-men take post at the pegs, their backs to the faces of the two pole-men ; take five paces to their front, dress themselves on the pole-men, and turn to windward. Two other tent-men join them, and stand back to back with them ; the four now take six paces to their front and halt.

The pole-men take a maul and four large pegs, and drive them at points marked by the feet of the tent-men.

The four tent-men return to the pegs marking the ends of the ridge-pole, and, after taking two paces in continuation of the line marked by it, turn back-to-back at right angles to the line, taking six paces to the front, and halt. Four large pegs for weather-lines are driven at their feet by the pole-men ; the pole-men return to the poles and lay the frame with the feet of the uprights against the pegs first driven, ridge to windward.

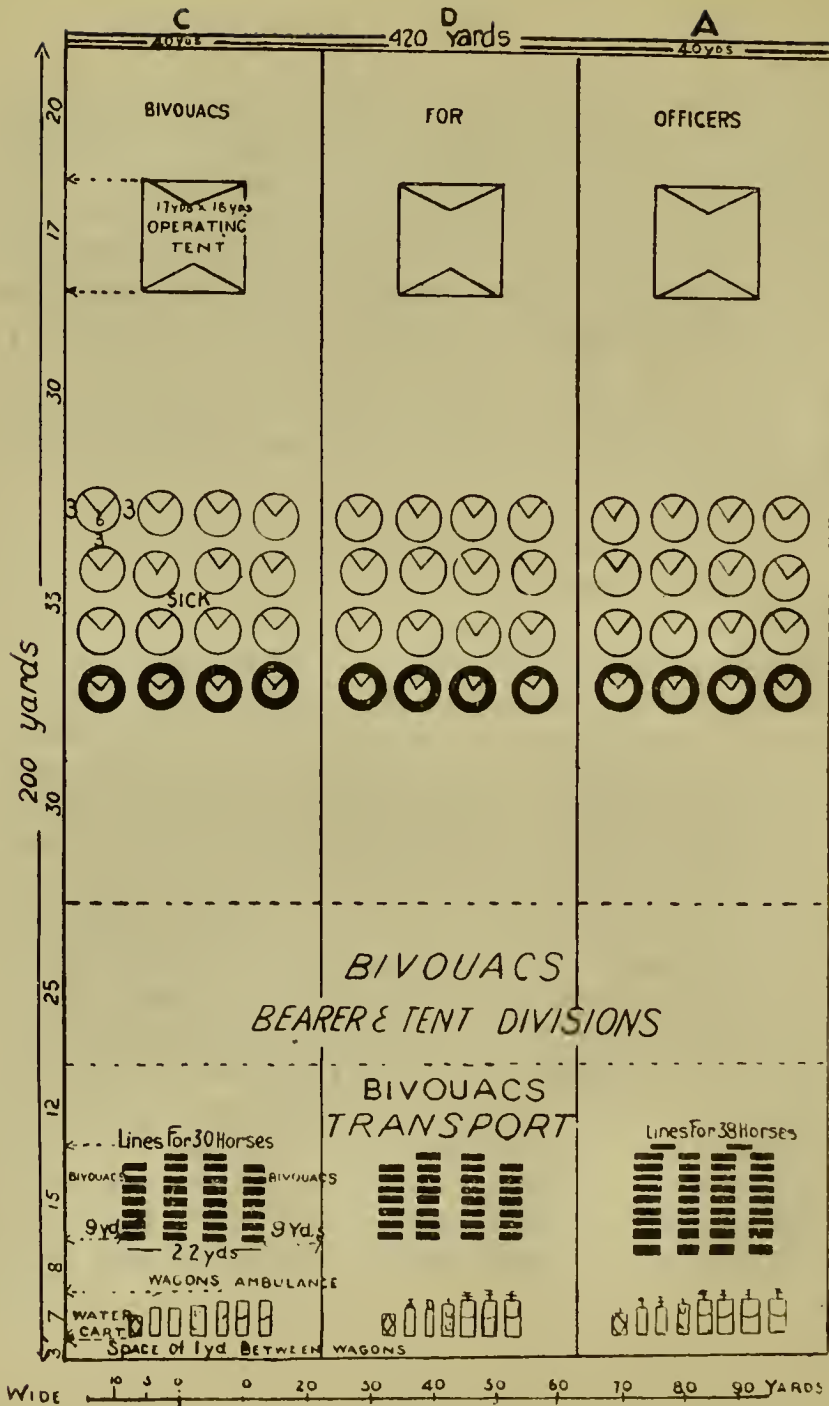
The tent-men roll up the upper side of the tent until the top is exposed, and, the pole-men raising the poles, the underside of the tent is drawn beneath them, and the poles adjusted, taking care that each ventilating-cord is on its own side of the ridge-pole. The vases with weather-lines are now fitted on, the lines uncoiled, and the four tent-men, each taking one, move towards the weather line pegs. The pole-men working with them, the tent is raised and the lines fastened to the pegs. The lines must not be crossed. The four tent-men each take an upper corner rope (distinguished by its being fastened to a ring through which another line passes), and adjust it to the large pegs first driven in. The doors are now laced and hooked.

The tent-men take the four lower corner ropes, and fasten them to the small pegs driven in a line with, but two paces nearer the tent than, the upper corner pegs. The pole-men adjust the windows, the tent-men drive pegs and adjust the front and side lines of the roof, drawing them square with the tent, and fasten down the curtain.

Note.—In fixing the upper corner bracing-line, it may be necessary to apply a bowline or sheepshank to shorten it.

100. *Striking an Operating Tent.*—The pole-men pull up the curtain-pegs and let down the windows. The tent-men cast off all ends and side-lines and coil them, and draw pegs. They then take post at the lower corner pegs. The pole-men stand to the poles; the tent-men cast off first the lower corner, then the upper corner ropes, and coil down; stand to the weather-line pegs, cast them off and hold them in the hand; then, working with the pole-men, lower the tent to windward, coil the weather-lines and remove the vases. The pole-men withdraw the poles and lash them together. The tent-men fold up the tent as follows:—The under side is first spread out flat, and the upper side drawn over it; the ends are folded over so as to form a square. The lower end of the square is folded over to the middle; the top end is folded over towards the middle as far as the ventilator-irons allow, and then refolded over the lower half. The whole is then rolled from end to end and placed in the valise.

PLATE XX.



Kitchens and Conservancy arrangements according to circumstances and requirements.
(This diagram is drawn up as a guide only).

CAMPS, BIVOUACS AND BILLETS.

101. **Camps.**—Ambulance camps are shown in Plate XX. These plans are drawn up for guidance, but need not be always rigidly adhered to. The unallotted spaces are to permit of expansion. It may be left to the discretion of the O.C. the unit as to whether he will have bivouacs for the bearer and tent personnel in front or in rear of the tents for the sick, or he may elect to place the horse-lines in rear of the transport; the transport personnel, however, should always be in proximity to the horse-lines. The point to be aimed at, taking in consideration the nature of the ground, is to arrange a compact camp, so that the space allotted for the accommodation of the sick is not too cramped.

102. The site having been chosen, and the line decided upon, the camp will be marked out as follows:—Mark the base-point with a tent-peg or flag; measure off the distance required for the front of the camp, mark this with a second tent-peg or flag.

The front of the camp being thus laid down, the rear of the ground will now be determined. Place a tent-peg or flag on the front alignment 6 feet from the base point, another tent-peg or flag 8 feet from the base-point towards the rear, and 10 feet diagonally from the other tent-peg or flag; the angle thus formed will be a right angle. Place a third tent-peg or flag in the same straight line as the 8-feet side of the triangle, at a distance according to the depth of the camp from front to rear. The rear line of the camp will be equal in length and parallel to the base-line, and will be marked with a fourth flag.

CHAPTER VIII.

WATER SUPPLIES.

103. Amount of water required.—In estimating the amount of water required daily for each person, it is necessary to allow a liberal quantity. There must be avoidance of waste, but still any error in supply had far better be on the side of excess. For those living in camps, under circumstances of stress, one gallon per head daily might suffice; including animals, the lowest allowance may be put at three gallons per head each day. As a general statement, a daily allowance of five gallons per man may be taken as the usual water requirement in camp, with at least as much again for each horse. Apart from the difficulties experienced in supplying more, it is desirable not to exceed this amount in camps, as any excess means waste, with corresponding difficulties in surface drainage.

104. Impurities in water.—The impurities which gain access to water and so render it unclean are various. Some reach the water at its source, some during its storage and some during its distribution. No matter how or where these impurities reach water, they exist practically in two states or conditions; they are either dissolved in the water, that is they are in solution, or they are merely floating in the water, that is in suspension. Experience has taught us

that the various substances which are dissolved in ordinary waters are not, as a rule, hurtful ; it is otherwise, however, with the suspended matter in waters. This suspended material is the true impurity in most waters, and may be in the form of fine sand, clay, grit or mud, that is, suspended matter which we can see with our unaided eyes ; or it may be germs and similar living substances which, although floating and suspended in the water, are so small that they are not to be seen by the naked eye. In other words, an absolutely clear and crystal-like water may be full of the harmful germs and most hurtful to anyone drinking it. As a matter of fact, the visible and invisible suspended impurities in water are usually associated, and it is rare to find one without the other ; but it is important to remember that it may be otherwise. It is, then, the suspended impurities in water which we have to fear as giving rise to disease. How the minute and invisible germs do so has been explained. The coarser suspended matter in the form of sand and grit is only a degree less harmful ; if this matter be taken into the body, it acts as an irritant to the lining membrane of the bowel, irritates and render it inflamed ; of itself, perhaps, this will not cause actual disease, but as this material is usually associated with harmful germs, the damage done to the bowel surface favours their penetration and entry into the blood and consequent ability to give rise to infection. In this manner, coarse dirt and mud, though not itself causing infection, sets up conditions in the body favouring infection by germs in the water.

105. Clarification.—This is the simplest and often the readiest method which can be applied for render-

ing a dirty water reasonably safe. Clarification or coarse straining of water removes only the mud and grosser impurities, and unless very specially conducted fails to remove the smaller suspended particles such as germs. In spite of this limitation, clarification is a procedure always worth doing ; far better to do this much than do nothing at all, while as a preliminary procedure it has the greatest value.

The simplest way of accomplishing clarification is to pass the water through a blanket or sacking or canvas stretched on an improvised wooden frame, dusting over the fabric ordinary wood ashes from a camp fire. The strained water is received in any suitable receptacle placed beneath. If the water is not sufficiently cleaned it may be passed again through the strainer or through another one conveniently placed. The straining powers of devices of this nature can be much increased if alum be added to the water before being poured on to the fabric. The alum forms gelatinous particles in the water and on the straining surface which entangle and hold back the suspended matter. An alternative device may well take the form of a canvas cone attached to a metal ring, having cords by which it can be hung from a tree branch. Such an improvised strainer can be used with or without wood-ashes or alum, and provided too much hurry is not exercised or the water not made to pass through too rapidly, it can and will remove not only coarse mud but a great portion of the associated germs ; by this means often an otherwise undrinkable water can be rendered reasonably safe. Many occasions on field service afford opportunities for the exercise of initiative on those lines, which can and should be turned to good account.

106. An effective strainer may be improvised by boring a small hole in the bottom of a barrel or other suitable receptacle, and partially filling the latter with layers of gravel, fine sand, and wood-ashes from below upwards. The gravel should be three inches in depth and the sand some twelve to fifteen inches deep, with some three inches of wood-ashes on the top. These thicknesses can be increased if the receptacle is large enough. The water to be clarified is poured in at the top, passes down through these layers, and is collected as it emerges from the hole in the bottom. On first using, the water will not be satisfactory, owing to the materials not having settled down, but on continued use the quality of the strained water will improve as the straining mass ripens. Periodically, the material will need cleansing and changing. The success of these methods depends largely upon not attempting to pass the water through too rapidly ; usually the working head or layer of dirty water on the top will be found to give best results if not exceeding six inches in depth.

In improvising strainers or clarifiers of the above types, care must be taken to get real sand, and not use sandy marl in which there is much clay. This latter, when wetted, binds and forms so dense a mass that percolation of water is slow and often absent. It must further be remembered that all improvisations of the kind are mere makeshifts and, unless the material be periodically renewed and the water not allowed to rush through too quickly, may be a source of danger. The addition of a small amount of alum is an advantage, since it produces a jelly-like precipitate which helps in arresting and entangling the more minute particles held in suspension.

107. Filtration is really an exaggerated system of straining or clarifying, and aims at purifying water by catching or holding back the smallest particles of suspended matter, including germs, and allowing to pass whatever is in a state of solution or dissolved in the water. Ordinary clarification fails to remove the germs or very small particles. The difference between filtration and clarification is merely a question of the size of the apertures in the straining material. When the material is so dense and close in texture that the smallest suspended particles cannot pass through, it is called a filter ; if so open and porous that only the coarser particles are held back, it is not a filter but merely a clarifier.

CHAPTER IX.

FIELD COOKING.

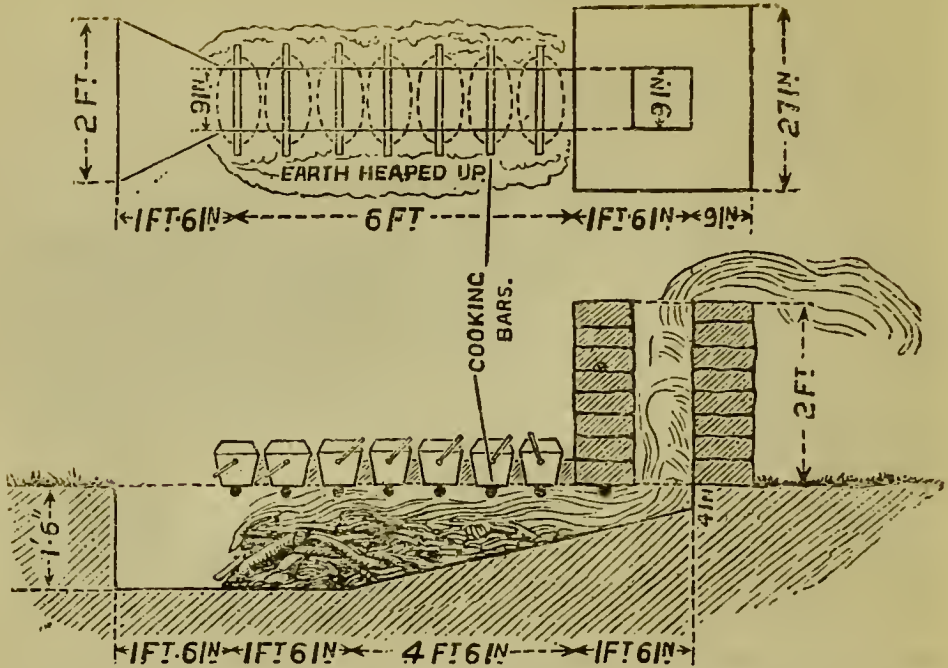
108. To cook rapidly and well is an art not difficult to acquire, and one which men should be encouraged to learn. The means generally used for cooking in the field are camp-kettles and the mess-tin, the lid of which can be used as a frying pan. Men should, in all circumstances, have their dinners ready an hour and a half after the rations are issued.

Messes should be by kettles, that is, the number of men composing a mess should depend on the kettle used. Full instructions with regard to this, as well with regard to cooking in mess-tins, preserved meat tins, etc., and the improvisation of field ovens, are given in the Manual of Military Cooking, together with useful recipes for cooking in the field.

109. Camp-kettles.—Camp-kettles are as follows :—

Name.	Weight.	Con- tents.	Surface Diameter.	Depth outside Measure	No. of men each will cook for.	
					with vegetables.	without vegetables.
Oval, large ..	lbs. 8	gals. 3	inches. $13\frac{1}{2}$ by 9	inches. 11	8	15
„ small ..	$4\frac{3}{4}$	$1\frac{3}{4}$	$12\frac{1}{2}$ by $8\frac{1}{2}$	8	5	8

PLATE XXI.



Plan and Sectional Elevation of Trench Kitchen with Camp Kettles, to show dimensions and detail.

PLATE XXII.



Field Kitchen without a Trench.

110. **Field Kitchens.**—On a unit's arrival in camp the cooks will at once proceed to make the kitchen. This can either be a trench-kitchen or without a trench.

The Trench-kitchen.—If the encampment is only for one night, one or two trenches, according to the number to cook for, should be dug 7 feet 6 inches long, 9 inches wide, and 18 inches deep at the mouth, and continued for 18 inches into the trench, then sloping upwards to 4 inches at the back, with a splay mouth pointing towards the wind, and a rough chimney 2 feet high at the opposite end formed with the sods cut off from the top of the trench. If the upper 6 inches of the edge of the mouth are bevelled off, air is more freely admitted to the trench. It will be advantageous if these trenches are cut on a gentle slope. This trench will hold seven of the large oval kettles.

Iron cooking-bars are placed across the trench to support the kettles. The kettles are placed side-by-side with their bottoms resting on the ridges of the trench. The spaces between them are packed with wet earth or clay, which should reach as high as the loops of the handles. The fuel, generally wood, is fed into the trench from the splay mouth. (See Plate XXI.)

Without a Trench.—The simplest and best arrangements for cooking in the field for any party over twenty, if the stay in camp is for a night only, is to place a proportion of the kettles on the ground in two parallel rows about nine inches apart, handles outwards; block the leeward end of the channel so formed with another kettle, lay the fire, and place over it one

PLATE XXIII.

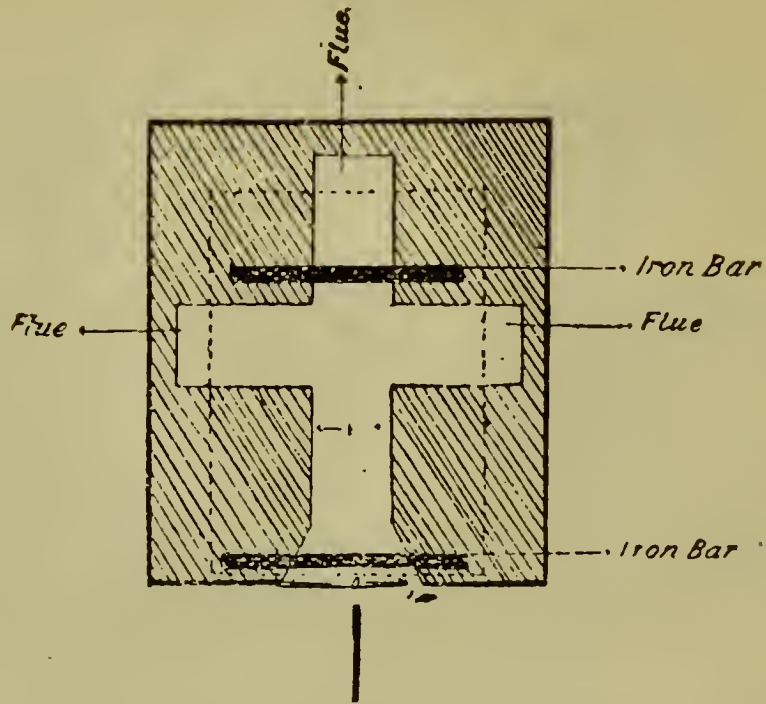


Fig. 1. Plan—Dotted line indicates tin in position.

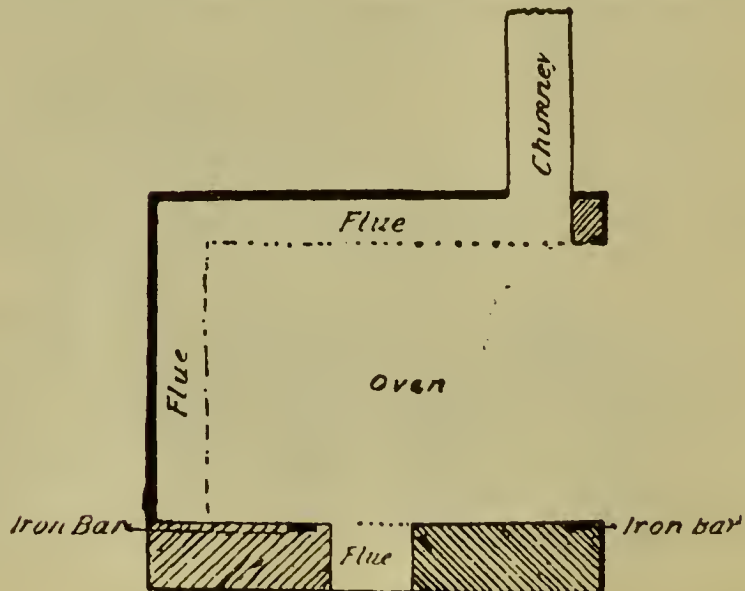


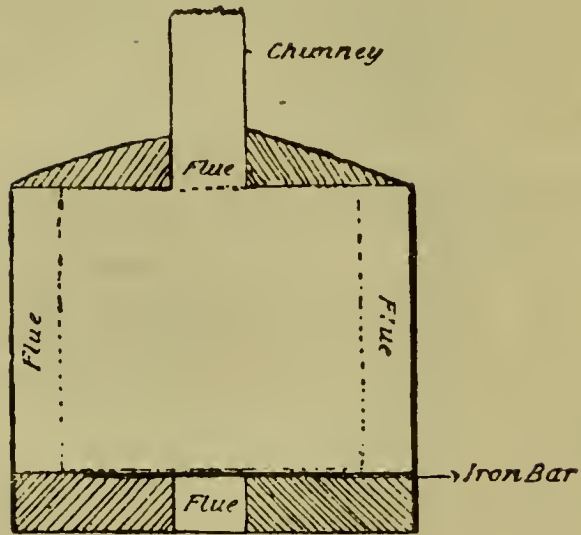
Fig. 2—Long Section.
Shaded parts indicate brick or stone.

or two rows of kettles resting on those already placed in position (See Plate XXII.)

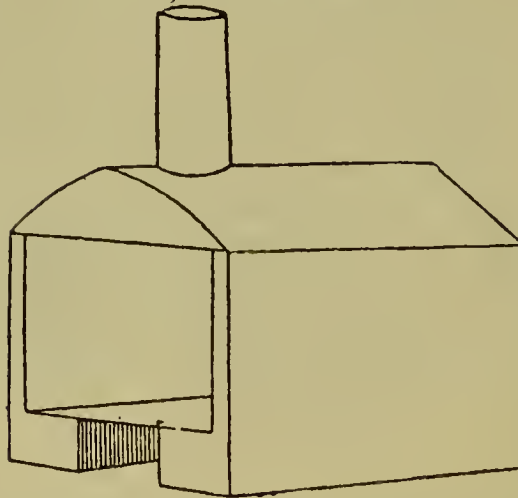
Mess-tins can be arranged similarly, but of these not more than eight should be used together.

111. **Improvised Field Oven.**—Given an empty kerosene oil tin and a few bricks or stones, a very simple form of improvised oven for a small party can be made on the lines indicated below. The following materials are required to construct the oven:—An empty kerosene oil tin with the top removed, two pieces of iron (hoop-iron if obtainable) for the tin to rest upon, and some bricks or stones; using mud or clay to cement the stones together. Build the base to form a cross as shown in Plate XXIII, fig. 1; on this place the bars and the tin lying on its side, and proceed to build up the stones and mud round the tin, at the same time forming the sides and back flues as shown in Plate XXIII, Figs. 2 and 3. The top is built, as in the Plate XXIII, Fig. 1, to form a cross-flue, the chimney being formed by means of an empty coffee tin or a piece of rolled tin. The opening to the oven can be closed with the top cut from the kerosene oil tin, and made tight with clay, or a stone may be used for the same purpose. The whole of the exterior should be covered with watery clay, or mud, as often as necessary. The fire should be lighted under the tin, wood being used as fuel.

PLATE XXIII.



(Fig. 3).
Cross Section.



(Fig. 4). Elevation.
Improvised Field Oven.

CHAPTER X.

SANITATION OF CAMPS

112. **Camp Sites.**—The selection of a camp site is dominated largely by the facilities which exist for obtaining water, this is particularly so in regard to temporary camps: but where camps are likely to be occupied any length of time the feasibility of bringing the water to the camp must be as much considered as taking the camp to the water. The proper location of a camp as a matter having a definite influence on the health and efficiency of soldiers, demands intelligent consideration. It is a good rule to select a site as if for continued occupancy, since the mere bivouac may, through necessity, become a camp of a more or less permanent character.

When possible, camps should be placed on high ground, since not only is the surface drainage better, but exposure to air currents facilitates evaporation. An abandoned camp site should never be utilized, except in circumstances of great necessity. Old camping grounds must be considered as more or less permeated with the organic soakage incidental to human occupation. As regards actual soil, it may be said the more porous the better, but if a camp must be pitched upon impermeable soil, like clay or rock, the locality affording the best surface drainage should be chosen.

Ploughed land should be avoided, so, too, should very dusty areas ; in all cases grass covered soil is preferable. In the selection of camp sites, apart from the question of water supply, the golden rule to follow is :—Choose areas which are not only dry but clean, that is, have not been occupied recently for encampments, and are not fouled or in any way encumbered with the recent filth of man and animals.

113. All tent-walls should be looped up during fine weather, so that the tent area may be dried and disinfected by fresh air and sunlight. Even in cold and doubtful weather, the sides of the tents should be tied up during the absence of the occupants. If removal to a new campsite or fresh tent area be not practicable, all tents should be struck and their enclosed ground area sunned or aired for a few hours every four days. In a properly arranged camp, the intervals should be always sufficient to render the shifting of a tent to a new site possible. Where huts are used, the doors and windows must be opened to permit of aeration and the entrance of sunlight, and the roof, if of canvas, should be turned back. The digging up or excavation of the soil within a tent area should be discouraged, as tending to impede ventilation and due cleanliness ; if floorboards are not available, then the ground may be covered with either straw or a tarpaulin, but whatever is employed it must be turned out and well-aired and cleaned daily, so long as weather permits. Blankets and bedding must be sunned and aired each day, either by hanging on supports erected especially for the purpose, or by spreading on the sunny side of the tent roof ; the former plan is preferable, as it allows access of light and air to both sides of the article.

114. Another important practice is to discourage the men, as far as possible, from eating their food in the tents, and also forbid the storage or retention of food in them.

115. **Kitchen and Ablution Places.**—These are a fruitful source of untidiness in camps, and consequently need to be managed and so arranged that remains of food and all greasy water is rapidly and efficiently removed from the immediate vicinity. The most important details which need attention are:—(1) That the kitchens and washing places be located so as to be handy for water, but remote from latrines, urine-pits, or other receptacles for refuse and garbage ; (2) all greasy water must be made to pass readily away, this will usually be affected by a passage into soakage-pits, and, if this does not suffice, then by drainage away along suitably-dug trenches. This waste water is greasy, and if allowed to pass direct on to soil soon makes a felt-like scum, which not only impedes the soaking in of the water but also attracts flies. A useful plan is to fill the reception-pits or the upper ends of the drainage-channels with coarse brushwood ; if the greasy water be poured on to this mass of brushwood, the grease and other organic solids are entangled, allowing the clearer liquid to run freely away. The brushwood loaded with fatty matter, is conveniently burnt daily and replaced by fresh cuttings.

An alternative plan, which has been found to be effective and easily improvised, is the following :—Take two large biscuit tins, the upper acting as a coarse strainer, and the lower serving to direct the water over and into a small pit, which filled with grass, heather,

PLATE XXIV.

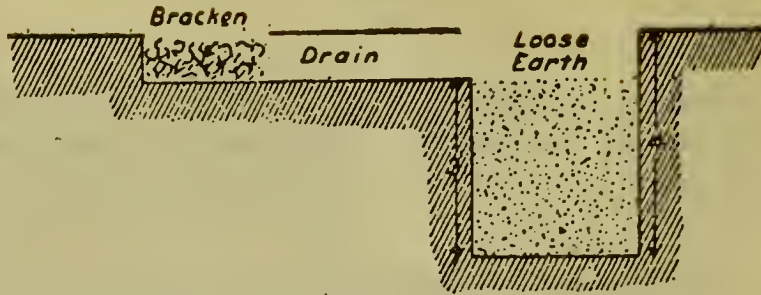


Fig. 1.—Grease Trap for Camps.

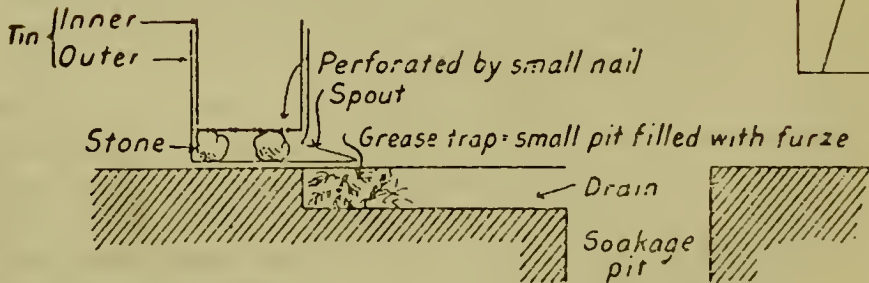
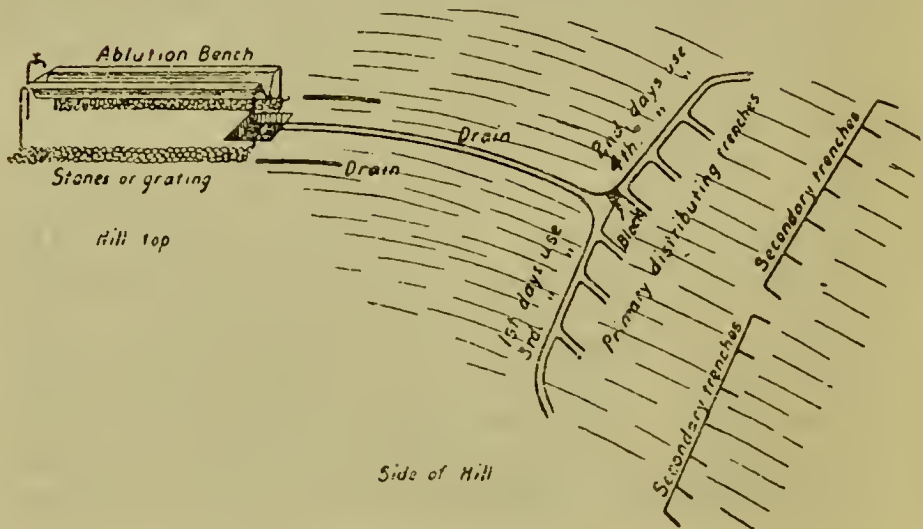


Fig. 2.—Grease Trap for Camps.

PLATE XXV.



Ablution and Drainage Place in Camp.

or brushwood acts as a grease-trap. From this small pit cut a shallow trench leading to a large soakage-pit. The inner tin should rest on two or more stones, so as to allow an interspace. The lower tin can be given a spout, conveniently made by cutting an inverted U or V-shaped flap from one of the sides, turning down and rounding off.

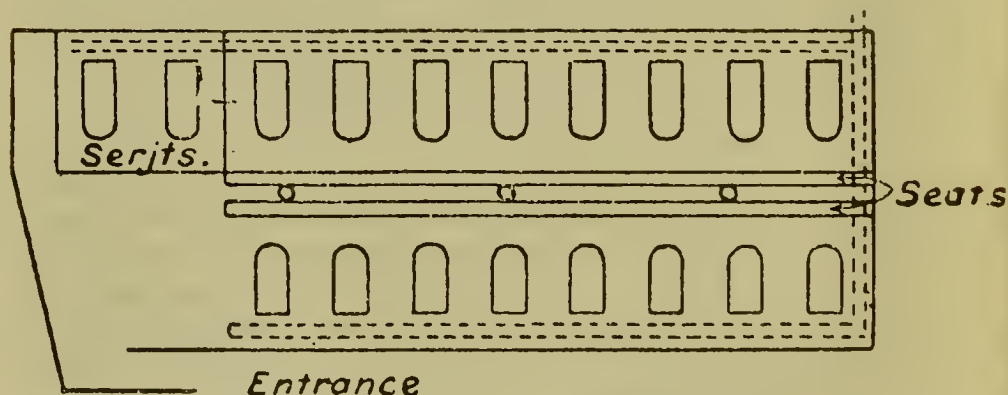
116. In connection with the kitchens and food supplies in camp it is desirable that the arrangements for washing cooking utensils receive attention. At each kitchen or mess there should be an appointed place devoted solely to the cleaning up of utensils. This should have a table, or boxes to serve as a table, a suitable straining pit handy, a sufficiency of clean cloths, and a plentiful supply of hot water. If sand is used for cleaning vessels, this should be previously baked over a fire, collected and kept in a tin box near the cleaning bench. Ashes from the wood fire may be used in place of sand. The whole process of washing up collecting and baking of sand should be under the supervision of one of the men of the sanitary detachment or sanitary squad.

117. The ablution places need to be located conveniently near the men's tents, and the soiled or soapy water therefrom drained away on similar principles to those indicated for kitchen sullage-water. Where ordinary ablution-benches with foot-gratings are available, care needs to be taken to prevent the adjacent ground becoming sloppy. Whether benches are available or not, the water must be run away quickly and tidily; the arrangement shown in Plate XXV,

modified according to the fall of the ground, will be found to meet the requirements of most cases. This work should be carried out by the sanitary detachment or sanitary squad.

118. In semi-permanent camps, some trouble should be taken to give the men reasonable facilities for baths. A very little initiative and ingenuity should suffice. Thus, a large tent or marquee can be divided by canvas screens, each compartment containing a seat, a foot-grating, and a tub or tin bath. The bath can be

PLATE XXVI.



Washing Place in Camp.

fitted with a wooden plug, which is made to discharge over a trough of galvanized iron (Plate XXVI). Or, a temporary hut can be made of canvas stretched over rough wood supports. A long seat should be arranged down each side, with a suitable number of foot-gratings and metal baths; these latter can be emptied by tipping into a conveniently cut drain. Even an ordinary bell tent can be used, placing in it six iron

tubs which can be emptied into a soakage-pit, from which leads a drain to a larger pit outside. Unless some devices of this kind are resorted to, and more facilities afforded to the man in these fixed camps for obtaining a decent bath with some measure of privacy, it is futile to expect a high standard of personal cleanliness from him.

119. Drying of Clothes.—Closely associated with the personal hygiene and comfort of the man, both in camps and in bivouacs, is the question of drying clothing which has been wetted by rain. It is true the wearing of wet clothes conduces to much less ill-health than many suppose; still, a great deal of personal discomfort could be avoided if some simple means of drying clothes, at times when neither the sun nor wind can be utilized, could be devised. The following method is deserving of note:—Pitch as large a tent as is available, dig one or more holes, some two feet deep, within the tent, sufficiently far from the poles and canvas to minimize the risk of fire. Line the holes with stones, and carry the stones up so as to make a rim or parapet round the hole, some feet high. The stones must be fairly large, and the diameter of the hole quite three feet. If a fire be lighted in the hole and carefully tended, the stones soon get quite hot and radiate a good heat. The wet clothing should be hung round the hole as well as the appliances on the spot will allow, and the tent shut up. With a little care and initiative considerable numbers of wet garments can be dried in this way in a few hours. In place of a tent a rough shelter can be built, or use made of some out-house on a farm.

120. Disposal of Refuse.—The refuse of a camp consists of general rubbish strewn about tents, kitchen-garbage, bits of crockery, tins, paper, and rags. This material must never be thrown casually on the ground, but needs to be dealt with strictly on a definite system. It must be thrown invariably into special receptacles conveniently placed for the purpose. On no account, unless necessity compels, should the solid and liquid refuse be mixed. Carts or other vehicles used for the removal of this material to the place of disposal should

PLATE XXVII.

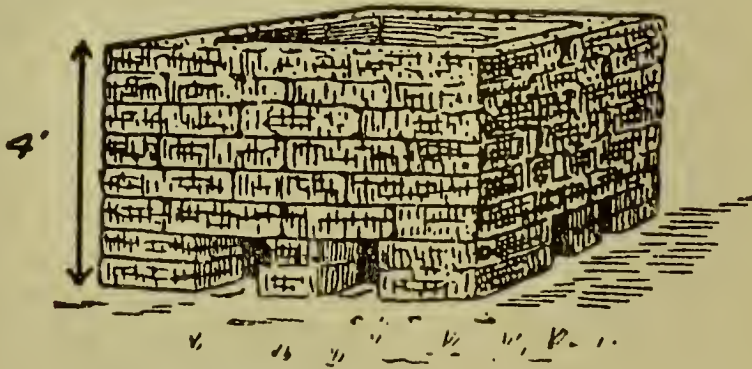


Fig. 1.—Camp Incinerator—Rectangular.

be designed so as to prevent any escape of their contents. The casual and too frequent mode of disposal of this waste material from camps to civilians, who collect and cart it through lines and encampments without regard to elementary sanitary rules, should be strenuously opposed. The man should be made to dispose of this refuse himself. If removal is arranged for by civil contract, close supervision must be exercised to see that there is a sufficiency of suit-

able tubs or receptacles with covers, that the removal is made daily in proper carts, and carried out at definite times during daylight, when the movements of these scavengers can be followed. The supervision and management of all refuse receptacles is a part of the duties of the sanitary detachment or sanitary squad.

PLATE XXVII.

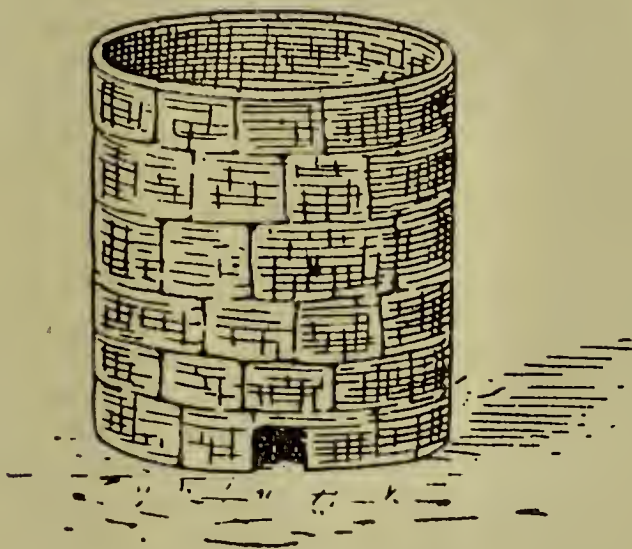


Fig. 2.—Camp Incinerator—Round.

121. All refuse should be burnt.—An improvised refuse-destroyer of a simple nature can be made by digging two shallow trenches intersecting each other at right angles ; each trench should be 9 inches deep and 9 inches wide where they cross, and getting

shallower and shallower to their ends. The length of each trench need not exceed five feet and may be advantageously made with an expanded or a trumpet-shaped mouth or end. Over the angles of intersection a chimney or shaft, some 3 feet high and 3 feet in diameter must be built up of turf-sods or bricks. Some ingenuity is needed to support the walls of the shaft or chimney where they cross the trenches. This can usually be overcome by utilizing bits of iron bands off bales or barrels, or even by knocking the bottom out of food tins and placing these metal tubes in the trenches, so as to support the walls of the shaft. A fire can be quickly lighted with any dry material at the bottom of the shaft, and fed steadily by throwing rubbish and refuse down the top.

122. Disposal of Excreta.—The proper disposal of this material is vital to the sanitary interests of all, but provided ordinary intelligence be exercised it presents fewer difficulties than might be expected. The moment a camp or bivouac is about to be formed or occupied the first duty of the commanding officer is to secure and protect his water supply, and at the same time to send forward his sanitary duty men for the location and preparation of latrines and urinals. The construction of these necessities must not be delayed until the tents are pitched and other camp duties have been performed; no matter how temporary the halt may be, the location and completion of these places is an urgent necessity demanding prompt action, and to be supplemented by the detailing of sanitary police to prevent surface contamination of the camp area by casual easement.

123. The general location of latrines will depend upon the direction of the prevailing wind and the position of the water supply, the rule being to place them to leeward of the camp and in such a position that no possible fouling of the water supply can result. The exact position of these places should never be left to the discretion of any officer other than the sanitary officer or such other officer of the medical corps as may be exercising sanitary supervision of the camp. Latrines and urinals should be as far removed from the tents as is compatible with convenience; under ordinary conditions this may be put at 100 yards. The latrines must be placed as far as possible away from the kitchens and other places where food is prepared or stored. The extent of latrine accommodation in camps will vary according to whether the area is for temporary or permanent occupation; in bivouacs it should be 3 per cent, for ordinary camps occupied for a few days it should be 5 per cent, and in those intended for longer occupation at least 8 per cent. These figures may be taken to represent either yards or actual seats, according to circumstances. The multiplication of latrines is undesirable, as one or two fairly large ones are easier of control than several smaller ones, and soil pollution is also more localized.

The later practice has been to dig not one long trench but a series of short trenches in parallel, across which the user straddles and readily directs both solid and liquid excreta clear into the cavity, without soiling the sides. The trench on the short and shallow system should be 3 feet long, 2 feet deep, and 1 foot wide, and the interspace between each trench not

more than three feet—preferably two and a half feet if the nature of the soil permits, so as to preclude the men using the trench otherwise than in the straddling attitude. These short trenches are far cleaner than

PLATE XXVIII.

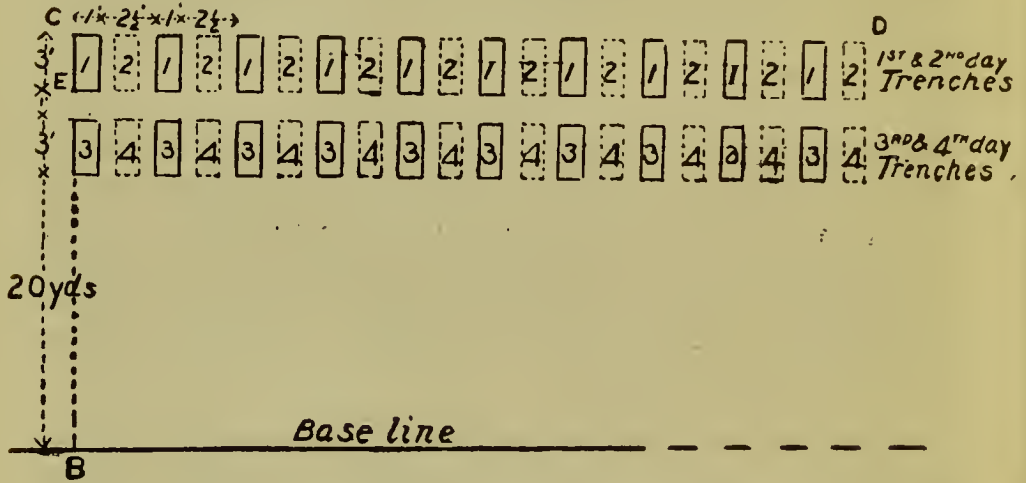


Fig. 1.—Diagram shewing how to lay out Latrines in Camp.

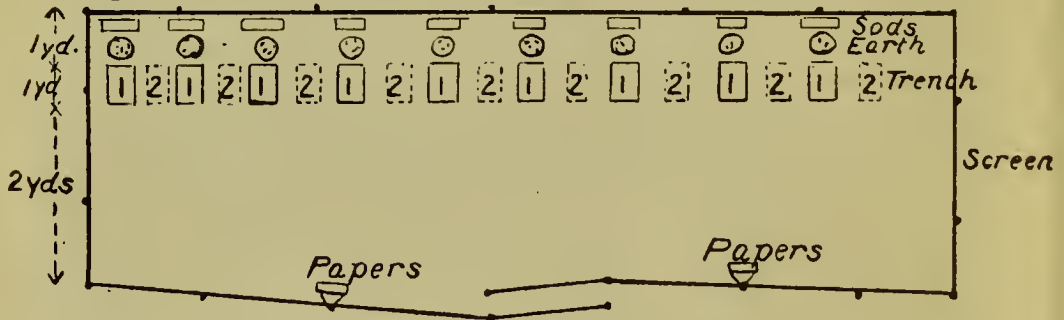


Fig. 2.—Diagram shewing how to lay out Latrines in Camp.
the long type, they entail less labour to dig, and are more efficiently filled up and renewed. If available, a seat in the form of a stout pole can be laid at right

angles to the trenches, supported on forked uprights. A back-rest may be formed by a similar pole, but is often omitted.

124. It is usual to allow five short and shallow trenches for every 100 men, but when the numbers of men are 500 or upwards, three per cent of trenches suffice, that is 500 men can do very well with 15 trenches. As a rule, a trench lasts only one day. A trench can be made to last longer if the contents, which tend to get heaped up in the centre, are levelled off and if the earth used for covering the excreta be finely broken up. If the space available is limited and the trenches are not filled in one day, a fewer number may be provided. The interspace of $2\frac{1}{2}$ feet is convenient and usually ample when the soil is firm, not sandy or crumbly. It allows plenty of room for another trench to be dug in it and the men using the second trench have nine inches of firm ground for each foot and there is an economy of space. A 3-foot interspace has the advantage of allowing more room between trenches, but it entails a longer frontage, more than is available with a minimum camping ground, and it also requires a greater length of screen.

125. The method of making and laying out these short and shallow trenches will be gathered from Plate XXVIII. Suppose B is the base line of the camp and that latrine trenches are to be dug to the rear; that the number of men is 200, and the probable length of occupation is thirty days. For this small number we must allow 5 per cent, or ten trenches daily, if over 500 men were present we could allow only 3 per cent. The frontage in yards required may

be calculated as being six times the number of hundreds of men present, that is 200 men will need 12 yards of latrine frontage. The depth for latrine area is two-thirds the number of days' stay. In this case, the occupation being probably thirty days the required depth will be two-thirds of 30, or 20 yards.

From B, and at right angles, measure off twenty yards, or BC, and drive in a peg at C. From C, take the line CD parallel to the base of camp and measure 12 yards. This line CD equals the line of first row of trenches. From C, along CD, measure off 1-foot and $2\frac{1}{2}$ -feet spaces alternately, marking the spots with a spade till there are ten 1 foot spaces. To do this, it is convenient to use a stick which is 3 feet long and marked at 1 foot and $2\frac{1}{2}$ feet, or a cord looped at one end and marked by pieces of coloured rag. From C measure three feet, CE. From E and parallel to CD mark off alternate spaces as before and join up. This outlines the first row of trenches. Next, remove the upper sod of each trench in one piece as far as possible, and put it about 3 feet behind the trench. Excavate the trenches till they are a clear foot deep, keeping the sides vertical, and placing the excavated earth immediately behind the trenches between it and the sod. This earth must be finely broken up. Surround the trenches with a canvas screen, the back being three feet behind and the fore-part at least six feet in front of the trenches. The entrance should be in the centre of the front and have a six-foot overlap. The length of screening necessary for 1,000 men on a 5 per cent basis will be 130 yards; if twenty-five trenches are used, they will require 70 yards.

126. On the second day, fill in the trenches with the remaining excavated earth, replace the sod, tread and beat down firmly. The advantage of the large upper sod is now obvious. Dig the second day's trenches in the interspaces of the first row. On the third day, dig a row of trenches similar to and parallel with the first row and one foot in front of them. Move the screening forward so as to surround them properly. Repeat the construction of trenches on the subsequent days in a precisely similar manner. After the latrine has been prepared, examine the slope of the ground and, if necessary, dig a shallow drain to divert surface water from the trenches, taking care that it does not flow on to the ground in front of the trenches, which will have to be used later on. This precaution applies also to urinals.

127. For covering the deposited excreta with earth, some kind of implement such as a spade, scoop, empty tin, or tin-lid must be provided near each trench for replacing earth and covering the filth over. Kicking the earth in by the foot is certain to be a failure and should be discouraged, as conducive to imperfect covering of the excreta, and consequent slackness. Men must be told the necessity for covering their dejecta : this precept cannot be impressed upon them too often. Failure on their part to cover the excreta properly should be made a matter of discipline, and systematically punished.

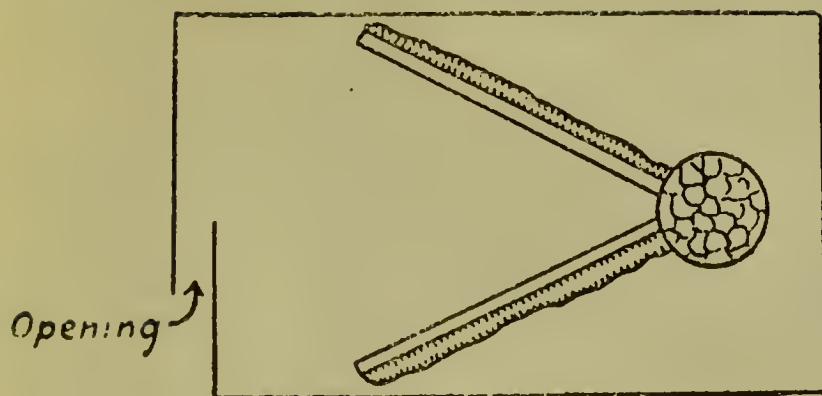
128. Considerable supervision is required over all latrines, and their proper administration is a most important factor in the preservation of the health of

men living in camp or bivouacs. One rule only must dominate the successful working of these places and that is all excreta must be covered up as soon as possible with earth, not only for mere purposes of deodorization, but to preclude the access to it of flies. These insects are one of the great means by which this filth and the associated germs are carried to man and his food. The practical problem is, how is this systematic and instant covering of excreta with earth to be secured and who is to do it? Is each individual man to cover his own filth or are special men to be detailed for this particular purpose?

The conditions of all latrines should be verified personally by the orderly officer of the day at least once during each twenty-four hours. So soon as the latrine trenches have been filled in to within six inches of the ground level their use should be discontinued, earth thrown in and the turf or sods replaced on the abandonment of a camp or bivouac, all latrine trenches must be filled in and the site marked as fouled ground.

129. In all camps, where ordinary receptacles are not provided, pits or trenches must be dug for the purposes of urination. For day use, these *urinals* are best placed within the screen and adjacent to the latrines trenches. Given a reasonably absorbent soil, the urine soon disappears, but it may be that such will not occur; in this case, care must be taken to make supplementary pits, while at all times the exposed urine-sodden soil must be covered at least three times a day with clean dry earth to protect it from flies. For night use, when special urine-tubs cannot be provided, or when the day urine-pits are any distance

PLATE XXIX.



Plan of Camp Urinal.

from the tents, it may be necessary to dig shallow urine-pits near the men's lines into which they can micturate at night. This is a practice which should be resorted to as rarely as possible: at all times such pits must be carefully filled in at dawn. Urine-tubs can be extemporized easily from empty oil tins, which may with advantage be partly filled with grass, chopped straw, saw-dust, earth, or any other absorbent material. These tins should be mounted on boxes or on rough wooden trestles, to reduce to a minimum all chance of splashing or spilling.

A variety of improvised urinals can be planned for camp use. These will best take the form of shallow trenches, at least 2 feet wide leading into a pit filled with large stones, the trench being for urinating into, and the pit to take the excess which fails to soak into the soil. Roughly, two trenches, each 8 feet long, will suffice for a battalion of full strength. The gradient

should be a fall of one inch to the foot. The catch-pit will vary in depth and size according to soil and number of men using the trenches ; one 3 feet deep and 3 feet in diameter in a moderately porous soil should suffice for 800 to 1,000 men. Plate XXIX. shows a typical example of one of the rough urinals. The trenches will last about two days and the pit some eight days ; when foul, new trenches can be dug as radii from the pit and the old ones filled in and all grass sods replaced. In some cases it may be feasible to screen off the pit to prevent the men actually micturating into it, shifting the screen with the trenches, or, better still, cover the pit with sods supported on stakes, and leave apertures by which the contributing trenches may drain into it. The ground around a urinal should be burnt when another has to be dug or the camp evacuated.

130. In closing this subject of the sanitary control of the camp, it is desirable to emphasize the fact that much of its successful practice depends upon the exercise of care and personal initiative. This is required not only of the men, but of the officer ; there can be little doubt that the men in all these matters will and must take their cue from the officer. The essential principle of sanitation in the camp, as elsewhere, is *cleanliness*. This state of cleanness must not only be maintained while the camp is occupied, but on evacuation the camp area must be left sweet and tidy, so that those coming after may not suffer from a heritage of filth. The surest index of the cleanliness of men and places is the absence of flies, for if there is no dirt or filth to feed upon the fly will not be present.

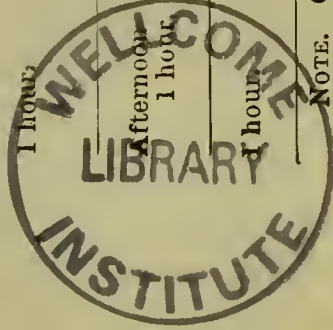
APPENDIX.—SYLLABUS OF TRAINING IN CAMP.

For the guidance of Officers in preparing programmes for camps of instruction. This syllabus may be adapted to camps of varying duration by repeating or omitting such stages or items as may be suitable. If the instruction would thereby be rendered more efficient, the stages may be transposed, and the various items interchanged or varied. Every opportunity should be taken of giving instruction in methods of field sanitation, field cooking, general rules for camps, interior economy of units in camp, reports, returns and indents. Map reading, simple field sketching, and semaphore signalling may be practised as occasion may offer.

Time.	1st. Day.	2nd. Day.	3rd. Day.	4th. Day.	5th. Day.	6th Day.
Morning 1 hour.	Squad and Company Drill.	Squad and Company Drill.	Squad and Company Drill.	Squad and Company Drill.	Stretcher exercises with patients over rough ground.	Field day with patients, formation of Dressings, and Collecting Stations, and transport of wounded, to base, and return of wounded.
Forenoon 1 hour.	Stretcher Drill.	Stretcher Drill.	Hand seat exercises.	Loading and unloading Wagons.	Tent Pitching and formation of field kitchens, latrines, etc.	
1 hour.	Lecture and questions on First Aid.	Lecture and questions on First Aid.	Lecture and questions on First Aid.	Lecture and questions on First Aid.		
	Stretcher Drill.	Stretcher Drill.	Loading and unloading Wagons	Exercises with loaded stretchers over rough ground.		
	Bandaging and application of First Aid.	Bandaging and application of First Aid.	Bandaging and application of First Aid.	Bandaging and application of First Aid.		
Afternoon 1 hour.						
1 hour.						

Lecture to Officers and N.C.O.'s on Camp Sanitation and interior economy.

NOTE. Officers should be exercised in giving instruction and the handling of their men under the supervision of the Officer Commanding.



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